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Effectiveness of an Educational Program for Enhancing Health Care Providers' Knowledge Regarding Tetanus Disease and Tetanus Toxoid Vaccine at Primary Health Care Centers in AL-Hilla City

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بسم الله الرحمن الرحيم

(أَمَّنْ هُوَ قَانِتٌ آنَاءَ اللَّيْلِ سَاجِدًا وَقَائِمًا يَحْذَرُ الْآخِرَةَ
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صدق الله العلي العظيم

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الأهـــداء

الى قرة عيني وضوء بصري وبصيرتي وطفولتي وصباي وشبابي وعافيتي ، الى انتمائي الانساني الاول ، ياقريتي وبستاني يا بحري وبري ، يا قلائدي وخواتمي وثيابي وعباءاتي .... يا وطني . . . الى .... بلدي العراق

الى قدوتي، ومثلي الأعلى في الحياة؛ فهو من علَّمني كيف أعيش بكرامة وشموخ.

الى أبي العطوف

لا أجد كلمات يمكن أن تمنحها حقها ، فهي ملحمة الحب وفرحة العمر، ومثال التفاني والعطاء إلى أمي الحنونة. . . . . .

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إلى زوجي أسمى رموز الحب والإخلاص والوفاء ورفيق الدرب

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Abstract

Tetanus is a bacterial infection characterized by muscle spasms, also known as lockjaw, through the open wounds the bacteria enter the body. The bacteria cause muscles to increase in size, which leads to spasms

The study aims to evaluate the effect of program education to enhancing Primary health care providers' knowledge regarding tetanus disease and tetanus toxiod vaccines.

A Quantitative research used quasi-experimental design was conducted in the preparation of an education program for primary health care providers about tetanus and tetanus toxoid vaccines at primary health care centers in AL-Hilla city. The study was carried out from 12th February 2020 to 28th May 2021

A Non probability (purposive sample) (40) of primary health care providers were selected from primary health care center. The sample of the study was divided into two equal groups of (20) health care provider for both the study group who were exposed to the educational program and (20) health care provider as the control group.

The program for Tetanus disease and Tetanus toxoid Vaccines in Primary Health Care Centers includes four lectures. Each one is comprised of an outline that include introduction, content, objectives, place of the lecture, teaching method, demonstration used for teaching and a time consume.

A questionnaire was created to evaluate primary health care providers Knowledge about Tetanus disease and Tetanus toxoid Vaccines in Primary Health Care Centers. The educational program and the questionnaire were validated through a panel of (14) experts. The test-retest reliability is obtained by the questionnaire equivalences.

Data was analyzed by descriptive statistical data analysis methods such as frequencies, percentages, and mean scores, as well as inferential statistical data analysis methods such as Chi-squared test and regression analysis.

The results of this study revealed that the number of females higher than male and the age of health care provider who have been participated in the study between (18-27 and 38-47 years), In addition, the study group's mean total score in post-test was (1.8) whereas although it was (1.2) in pre-test, and the control group's mean total score in post-test was (1.2), whereas it was (1.2) in pre-test (1.21). (1.2). When compared to the control group's pre-test and post-test results, which remained relatively unchanged, this indicates a difference between pre-test and post-test in the study group where primary health care providers attended two sessions of educational program; additionally, the assessment of response rate has changed dramatically from failing to pass in the majority of items.

The study concludes that this educational program of tetanus disease and tetanus toxoid vaccines in primary health care centers had an effect on primary health care providers' knowledge in the study group after its application.

The study recommends the enrolling of primary health care providers in training sessions to improve their expertise and keep them up to speed on vaccines, particularly those for tetanus illness and tetanus toxoid.

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List of Abbreviations

Item	Full term
ACIP	Advisory Committee on Immunization Practices
ACOG	The American College of Obstetricians and Gynecologists
ANC	Absolute Neutrophil Count
BCE	Before the Common Era
CDC	Centers for Disease Control and Prevention
CG	Control group
DEg	Demographic Data
DHHS	Department of Health and Human Services
DHS	Demographic and Health Surveys
DTaP	Diphtheria, Tetanus, pertussis antigens, Pertussis
DTP	Diphtheria, Tetanus, Pertussis
DT	Diphtheria, Tetanus vaccines
EEG	Electroencephalogram
F	Fail
FDA	Food and Drug Administration
GBS	Guillain-Barré Syndrome
HCP	Health care professionals
HIV	Human Immunodeficiency Virus
HTIG	Human Tetanus Immunoglobulin
ICN	International Council of Nurses
IgG	Immunoglobulin

IM	Intramuscular
IVIG	Intravenous Immunoglobulin
IMPAC	Integrated Management of Pregnancy and Childbirth
MNTE	Maternal and Neonatal Tetanus Elimination
EMNT	Elimination of Maternal and Neonatal Tetanus
NHS	National Health Service
PRP	polyribosylribitol phosphate
PRP-T	polysaccharide conjugate vaccine covalently linked to tetanus toxoid
PHE	Public Health England
Rho(D)	Immune Globulin Administration
S	Significant
NS	Non-significant
SPSS-XX	Statistical Package of Social Sciences 24
Td	Tetanus, Diphtheria
TIG	Tetanus immune globulin
TST	Tuberculin Skin Test
TT	Tetanus Toxoid
USSGO	United State Surgeon general office
UNFPA	United Nations Populations Fund
(UNICEF)	United Nations International Children's Emergency Fund
USA	United States of America
WHO	World Health Organization
VAERS	Vaccine Adverse Event Reporting System

A	Alpha Cronbach
%	Percentage
E_i	Expected frequency
σ_{ii}	Variance (not standard deviation) of item i
σ_{ij}	Estimated covariance between items i and j
O_i	Observed frequency
χ^2	Chi-square
$\sum$	Sum

Chapter One

Introduction

Chapter One

Introduction

1.1. Introduction

Tetanus is a serious infection caused by the bacterium Clostridium tetanus. The spores of bacteria tetanus are found everywhere in the environment, including dust, soil, manure. These germs develop to enter the body through skin cracks, usually over contaminated body injuries (Collins, et al., 2016).

Through the open wounds the bacteria enter the body. The bacteria cause muscles to increase in size, which leads to spasms, stiffness, and curvature of the spine. Ultimately, breathing becomes additional difficult, and convulsions occur frequently, this is called Neonatal tetanus. Most children who contract the disease die, neonatal tetanus is mainly communal in rural area wherever greatest births take place at home without passable germ-free procedures. The World Health Organization (WHO) estimated that newborn tetanus murdered approximately 128,000 children in 2004 (WHO, 2010).

Many vaccine-preventable diseases cause substantial morbidity and mortality in pregnant women, neonates, and infants. However, vaccination of very young infants by direct immunization is limited by poor immunogenicity and interference from maternal antibody (Chu & Englund, 2014).

During pregnancy, immunization has the ability to protect the mother, fetus and child through placental transfer of maternal immunoglobulin G (IgG). During the first six months of an infant's life, Maternal IgG offers passive immunity until the infant is able to completely react to the vaccine.

Maternal immunization can also reduce illness in pregnant women as well as in fetuses. (Haberg et al., 2013).

Tetanus may be avoided by means of immunizing girls of reproductive age towards it, either for the duration or earlier than being pregnant. The transmission of tetanus antibodies to the fetus protects both the mother and the newborn (WHO, 2010).

Policies of Immunization chosen to reduce vaccine preventable diseases in mothers, their children include immunization during pregnancy and immunization of all caregivers to the infant or "cocoon". Benefits to the infant from immunizing the mother directly through passive transfer of antibodies to the mother and indirectly by preventing disease transmission via the infected mother (Healy, 2013; Healy & Baker, 2006; Zaman, et al., 2008). Both strategies are recommended for the prevention of tetanus, influenza, and whooping cough (CDC, 2011; Williams, et al., 2014).

Primary health care providers (HCP) achieved outstanding immunization coverage among children. Sadly, vaccine coverage among adults is significantly delayed (CDC, 2011). Pregnant women pose a particular challenge to immunization, due at minimum in part to the reticence of both healthcare providers, pregnant women (Broughton DE, et al., 2009; Esposito S, et al., 2007).

People who recover from tetanus do not have natural immunity and can be infected again, therefore need to be immunized. To be protected throughout life, an individual should receive three doses of DTP in infancy, followed by a booster containing tetanus toxoid (TT) – at school-entry age (4–7 years), in adolescence (12–15 years), and in early youth (Report on the Committee of Infectious Diseases, 2000; WHO, 2010).

Tetanus, vaccine preventable and lifestyles-threatening, continues to endanger pregnant women's lives and fetuses, notably in regions with low coverage tetanus toxoid immunization (TT). The bacteria Clostridium tetanus causes tetanus, a widespread infectious illness (Cook et al., 2001). The sickness is greater commonplace in regions with terrible sanitation. (Sheffield & Ramen, 2004).

Initiatives to eradicate maternal and newborn tetanus have been pursued by WHO and other organizations. A significant contribution to this initiative is the "Eliminate Maternal and Neonatal Tetanus by 2005" (MNTE by 2005) program. Founded by the World Health Organization, the United Nations Population Fund (UNFPA) and the United Nations I as a joint initiative (WHO, 2012).

An acute, exogenous disease that produces Clostridium. Neonatal disease, usually appears during the initial two weeks of life and involves general stiffness and convulsions in the In most cases, the lack of medical attention before death (Koenig, et al., 1998; Wilson, 2005).

Global vaccination programs have reduced the global burden of tetanus neonatal death and are still doing so; Estimates show a decrease from about 146,000 in 2000 to 58,000 (CI: 20,000-276,000) in 2010 (Stanfield JP, et al., 1973). However, because tetanus spores are ubiquitous in the environment, eradication is not, and biologically highly viable immunization coverage remains essential (Muhammad, et al., 2017).

Tetanus toxoid (TT) is a vaccine that is given to people in several forms. Unlike most other vaccines on the national vaccination schedule, DPT, TT, TD, DT, or in all age groups. Given how frequently it is given, beginning in childhood, it is critical to understand the various tetanus immunization schedules in order to identify when the next dose is required. However, when a person sustains an injury, they are only given a single

dose of TT and are not required to complete the rest of their tetanus immunization regimen. The explanation could be that the person has forgotten about their latest TT dose, or that primary health care providers were unaware of the proper tetanus immunization schedules to follow, or that even if they were, they were not given adequate information for the general public. Anaphylaxis might occur as a result of these unexplained recurrent TT infusions. With this in mind, it was decided to compare the general public's awareness of tetanus vaccine to that of health care practitioner (Kumar et al., 2005).

In most developed countries, the TT vaccination program is introduced as a supplemental operation as part of the normal vaccination program. Since the early 1970s, TT vaccination among women has remained low because of demographic, social, cultural and economic factors, despite substantial resources been invested in the routine vaccination program in India (Maral, et. al., 2001; Vandelaer J,et.al., 2003).

Tetanus toxoid vaccination has been part of the habitual immunization software in New Zealand (NZ) due to the fact that 1958, it has been supported since 1960. Since the 1940s and 1950s, tetanus toxoid (TT) has been provided as a voluntary vaccine to persons serving in the military. The National Immunization Schedule (the Schedule), which began with four childhood doses in 1960, has expanded the number of doses given over the decades. (Ministry of Health, 2006; Ministry of Health, 2018).

Children in New Zealand now obtain 5 dose of tetanus vaccination from the age of six weeks to twelve years as part of the Tetanus Vaccination Schedule, which began in January 2019. Antigens from diphtheria toxoid and acellular pertussis are commonly given with tetanus vaccinations (DTaP or Tdap). Additional tetanus-diphtheria (Td) vaccination doses are funded for people aged 45 to 65. Tdap is given as a

part of pertussis care for each pregnancy whilst a tetanus-inclined damage occurs more than five years after a previous booster, and TD is given whilst a tetanus-susceptible harm takes place greater than 5 years after a previous booster (Nowlan, 2019).

In India, 75 percent of pregnant women receive antenatal care, 59 percent of women receiving the Trinidad and Tobago vaccine and 52 percent of births appeared by accomplished health personnel results in a neonatal mortality rate (32.2) per 10,000 live births and a rate a Women mortality 200 per 100,000 live births (Singh et al. 2012). The disease is thought to have caused 128,250 new births and 30,000 maternal deaths in Africa and Asia in 2004 (Zarukustas, 2008).

Those mean have been decrease than the Nineteen Eighties highs, when the disease claimed the lives of greater than half of 1,000,000 toddlers (Roper et al., 2007). whilst the load of maternal and neonatal contamination, as well as tetanus-related death, remains high in impoverished nations, recent research have found lower levels of immunization in affluent countries with widespread vaccination programs, such as Austria (Prusa et al., 2011).

Any gaps, or lack of knowledge around vaccine indications, contraindications and side effects on the vaccinator's behalf can have a significant detrimental impact on vaccination rates (Goodyear-Smith, et al., 2009). Staying updated with the current vaccination schedules and guidelines can also be difficult for some healthcare providers, and vaccination coverage is impacted by the insufficient knowledge of the benefits of vaccination among healthcare providers (Paterson, et al., 2016). Patient dissatisfaction with the advice provided by doctors with regards to vaccines is one of the most prominent reasons for low vaccine acceptance

rates. On the other hand, a doctor's recommendation to receive a vaccine is also the strongest predictor of vaccination (Camilleri,et al., 2018).

This demonstrates the important influence healthcare providers can have to help increase the uptake of vaccines. Unfortunately, some healthcare professionals especially homeopathic practitioners (Dube E, et al., 2015; Lee C , et al., 2018), and practitioners of some complementary or alternative medicines and therapies hold negative attitudes towards vaccination, even despite official position statements from their professional organizations which support the use of mainstream evidence-based vaccines. These providers consider vaccines against certain diseases ineffective, which contributes to lower vaccination uptake amongst their patient cohort (Jones L, e al., 2010).

Systems barriers: The most obvious system barriers are those affecting the supply and distribution of vaccines. In jurisdictions where vaccines are not subsidized or provided free of charge, costs remain a considerable barrier, especially for those who are not covered by health insurance. The strict vaccine storage requirements (e.g. maintaining cold chain) and lack of trained personnel to administer the vaccine also represents a major challenge for some developing countries (Esposito, et al., 2014).

Inadequate stock or delayed production and supply of some vaccines (e.g. for influenza, tetanus, pneumococcal and measles) have also been reported due to the lack of manufacturing capacities in some countries (Smith,et al., 2011). Vaccination coverage is also influenced by the lack of adequate systems for supporting patient health literacy (e.g. to understand complex vaccine schedules). The other barriers to achieving vaccination requirements in a timely manner are the missed opportunities for administering vaccines or inadequate reminder/recall systems for those whose vaccines are overdue (Esposito, et al., 2014).

Missed vaccination opportunities occur when there is any contact with health services, but that did not result in an eligible patient receiving the needed vaccine(s). A secure, timely and reliable population-based system to collect and consolidate vaccination data, with the ability to activate effective reminders or recalls for patients to receive vaccinations is urgently required (Esposito S, et al., 2014). Unfortunately, such systems are not well developed or fully adopted in many countries. Missed vaccination opportunities are predominant in adolescents as they are no longer followed by paediatricians and often do not require ongoing medical care (Wong, et al., 2013).

As part of its call for nurses' greater involvement in both health promotion and primary health care, ICN has long advocated that nurses can and do play a critical role in immunization the world over. In fact, some parts of the world rely solely on nurses to manage their immunization programmes, including training and supervision of other health care workers to administer vaccination (ICN, 2013). However, there is more to be done and today, since 1 in 10 infants did not receive any vaccines in 2016, with the proportion of children who receive recommended vaccines not increasing since then, and since adult vaccination is highly underutilized (WHO, 2018), it is clear that Primary health care providers and other health care professionals must pay more attention to immunization as a public health intervention.

Indeed, given nursing's current involvement in all aspects of immunization, its extensive presence across health care sectors, and high public trust, ICN believes that increasing and enhancing the engagement of Primary health care providers in the full spectrum of immunization activities (ICN, 2013), as part of their expanding role in primary health care, is a key strategy for improving global immunization rates.

This spectrum of immunization activities includes: awareness raising and public advocacy related to the importance of immunisation; active health education; dispelling myths; assisting individuals in the management of their immunisation schedules; administering vaccinations; prescribing vaccinations; overseeing vaccination programmes; supervising others on the immunisation team; and advising on immunisation programmes and strategies. Primary health care providers are involved in all of these activities, to a greater or lesser extent in countries around the world (ICN, 2013) and have a critical role to play in increasing immunisation reach.

It is ICN's position that nursing can influence vaccination rates globally and, as such, has developed a comprehensive immunisation strategy (ICN, 2016). However, just as the public has become complacent about immunisation given its apparent simplicity, focus on prevention and high publicity of adverse events, so too in some cases has nursing. With so many other high tech and complex interventions that make up nursing's knowledge and skill set, immunisation in some contexts is not given the attention it deserves as one of the most cost effective and successful interventions in the world.

1.2. Importance of the Study

Out of every 10 individuals that develop it, tetanus is a rare but highly dangerous disease. Owing in part to tetanus vaccines, tetanus deaths have decreased by 99 percent since 1947 in the United States.The World Health Organization estimates that tetanus caused about 49,000 newborn deaths in 2013, which is less than 94% of the cases recorded in 1988, when nearly 787,000 newborns died from tetanus in the first month of life (WHO, 2015).

According to estimates from the global Burden of disorder observe released in 2015, tetanus caused extra than fifty six,000 deaths global in 2015, with 79 percent of those deaths occurring in Sub-Saharan Africa and south Asia (Kyu, et al., 2017). Since 1961, when the national tetanus immunization program was implemented, the number of cases has dramatically decreased in the United Kingdom; between 2002- 2018, 118 cases and 13 deaths were registered in England and Wales (PHE, 2019).

The occurrence of tetanus is worldwide, but it is a common problem in areas that are densely populated in hot climates in which the soil is rich in organic matter. The incidence of tetanus in England and Wales decreased following the introduction of national immunization in 1961. By law, tetanus became a notifiable disease in October 1968 in the UK. On average, six cases of clinical tetanus per year were reported in England and Wales between 1992 and 2002.Although the number of cases reported is declining, there is evidence that many cases are not being reported. Rushdy et al estimated the under-reporting to be between 54–64%.(Mallick & Winslet, 2004).

Prior to tetanus toxoid create in 1924, tetanus had elevated morbidity and mortality rates worldwide. The first vaccine was not very successful and had serious adverse effects. In 1938, a better and safer version became available. It was widely used for soldiers during World War II in the 1940s, resulting in a tetanus reduction of 95 percent. Tetanus toxoid is internationally known as the safest toxin (Callison & Nguyen, 2020).

Toxoid tetanus is used as a vaccine in conjunction with diphtheria and whooping cough. There are actually five vaccines containing toxoid tetanus (DTaP, DTP, Tdap, Td, and DT). D for diphtheria, T for tetanus, P for whooping cough, and a for cell. The mark is as follows. For this vaccine,

the lower cases p and d just mean reduced toxin. DTP (diphtheria, tetanus, and whooping cough) has been administered as a result of 1948 to 1991. Owing to the elevated adverse injection response to redness, swelling, and discomfort around the site, it was discontinued. Two new vaccines were replaced in 1992, TDaP and DTaP (Callison & Nguyen, 2020).

Despite the fact that tetanus toxoid is rarey and so important due to immunization, people can still get sick. When this happens, complications can be severe, even fatal. People who experience it can have breathing problems and intense muscle spasms that are powerful enough to break a bone.Tetanus can also cause paralysis (Rhinesmith & Fu, 2018). Tetanus has no treatment. Tetanus is best prevented with vaccination.

Tetanus in newborns is still a leading cause of death in the world. great discounts in Neonatal tetanus deaths had been stated following enormous will increase in tetanus toxoid immunization insurance, even though the diploma of evidence for the results of tetanus toxoid immunization mortality is low, as just two research were evaluated within the Cochrane overview (Blencowe, et al., 2010).

Even before a tetanus vaccination was available, proper delivery techniques and umbilical cord care were helping to reduce newborn tetanus in most of Europe and North America. The vaccine's introduction in high-income countries has resulted in additional decreases, but it has also opened doors for advancement in low-income places (WHO, 2006; Offit & DeStefano, 2013).

The toxoid (inactivated toxin) vaccine was originally created in 1924. (Roper M, 2009). It has become first made commercially available in 1938 and turned into widely hired for the duration of world conflict II. In the past, due Nineteen Forties, it became combined with the diphtheria and

pertussis vaccine to create the triple DTP vaccine, that's now used in many pediatric immunization packages (WHO, 2006; Offit & DeStefano, 2013).

The placenta actively transports tetanus antitoxin from the inoculated mother to the fetus, offering passive safety against tetanus during the new child period and the primary month or of existence. on the time of shipping, maternal and newborn tetanus antibody concentrations are generally identical (Ray B, et al., 2009). however, in the context of maternal malaria and HIV infections, the transmission of placental antibodies can be inhibited (Verma & Khanna, 2012).

1.3. Statement of the Problem

Effectiveness of an Education Program for Enhancing Primary health care providers Knowledge Regarding Tetanus disease and Tetanus toxoid Vaccines at Primary Health Care Centers in Hilla City.

1.4. Objectives of the Study

The study aims:

1- To evaluate the effect of program education to enhancing Primary health care providers knowledge regarding tetanus disease and Tetanus toxoid Vaccines.

2- To find out statistical differences between Primary health care providers knowledge regarding tetanus disease and Tetanus Vaccines among study and control group.

3- To find out the association between primary health care providers knowledge regarding tetanus disease and Tetanus toxoid Vaccines and their demographic characteristic.

1.5. Definitions of Terms:

1.5.1. Effectiveness:

Theoretical Definition

It is the ability to produce the result desired or the ability to produce the output desired. If something is deemed good, it means that it has an expected or predicted outcome, or it generates a deep and vivid impression. (Dictionary.com, LLC, 2011).

Operational Definition

The ability to be successful and produce the intended results for enhancing health staff knowledge Regarding Tetanus Vaccines.

1.5.2. Education program

Theoretical Definition

Health education is any set of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their knowledge (Green and Kreuter, 1999; Kumar & Preetha, 2012).

Operational Definition

is defined as a series of educational activities organized to achieve a pre-determined goal or to complete a specified set of educational tasks.

1.5.3. Enhancing

Theoretical Definition

The quality, value, or degree of an increase or improvement (Downing, 2011).

Operational Definition

It means improving primary health care providers' knowledge by adding information related to the tetanus toxoid vaccine.

1.5.4. Health Care Provider

Theoretical Definition

It is the person who offers individuals, families, or communities preventive or curative health care services that can also include education, assistance, pharmacy . There are many different categories of providers of health care, ranging from physicians, obstetricians/gynecologists, physician assistants, nurse practitioners, licensed professional nurses, registered nurses, (WHO,2006; AAMC, 2018).

Operational Definition

An individual that provides preventive, curative, promotional or rehabilitative health care services in a systematic way to individuals, families, or communities. An individual health care provider may be a healthcare professional in medicine, nursing, or allied health professions. Primary health care providers may also be public / community health professionals. Institutions include hospitals, clinics, primary care centers, and other service delivery points.

1.5.5. Knowledge

Theoretical Definition

Is a feeling of familiarity, perception, or comprehension of someone or something, such as facts (descriptive knowledge), skills (procedural knowledge), or things (acquaintance knowledge). Information can be obtained in a variety of ways and from a range of sources, including but not restricted to, interpretation, reason, recollection, testimony, scientific

inquiry, schooling, and practice, according to most accounts. Epistemology is the metaphysical study of knowledge. A theoretical or functional understanding of a topic is referred to as data (knowledge definition, American English, 2010).

Operational Definition

It is the degree to which the primary health care provider in primary health center perceives information and instruction related to the tetanus disease and tetanus toxoid vaccine

1.5.6. Tetanus

Theoretical Definition

It is an acute illness caused by Clostridium tetanus formed by an external toxin. Infection of newborns typically occurs through exposure to the globally detected tetanus germs in the soil of the unused umbilical cord stub, and neonates need to obtain antibodies from the mother through the placenta to protect them at birth (Blencowe H, et al., 2010).

Operational Definition

Is a severe Painful muscle tightening, generally in the body, caused by bacteria. It can contribute to the jaw being "locking" so that the patient cannot open or swallow his mouth.

1.5.7. Tetanus toxoid Vaccine

Theoretical Definition

It is an ineffective vaccine that prevents tetanus infection.Since then, immunization programs with TTCVs have achieved great success in

preventing maternal and neonatal tetanus (MNT) as well as associated tetanus (WHO, 2017; Ogden et al., 2020).

Operational Definition

Tetanus is a debilitating, bacteria-induced illness. The tetanus toxoid vaccine exposes the person to a small amount of bacteria (or a bacterial protein) that allows the body to develop immunity to the disease.

1.5.8. Primary Health Care Centers

Theoretical Definition

It is a community-wide approach to health and well-being focused on people, families and communities' needs and desires. It discusses the wider health determinants and focuses on holistic and interrelated physical, mental and social health aspects and well-being (June, 2020).

Operational Definition

It is the basic unite that provide essential health care that is entirely accessible to individuals and families in the local community in ways that they can accept and with their full commitment and at the price that local community members and the entire nation's population can afford.

Chapter Two

Review of Literatures

Chapter Two

Review of Literature

2.1.: Theoretical Framework

Although there are many different theories of health promotion that enhancing heath and knowledge for human so the intervention-based model: the Tannahill model was one of the important theories that enhancing health and change health behavior.

In the 1980s, Andrew Tanahill used a model for health improvement consists of three interrelated fields of activity:education of health, prevention and preservation of health. This was done in response to a focus review in the literature from health education and prevention to health protection and promotion of health. To change knowledge, beliefs, attitudes and behavior, the health education is designed to facilitates health. Therefore, disease prevention, including primary, secondary and tertiary prevention, is aimed at reducing risk factors and reducing disease outcomes. The focus of health security is on tax and legal regulations, voluntary practice policies and codes targeted to avoiding ill health and encouraging well-being. Tanahill (2009) stresses that public strategies that allow access to accommodation, work and caring of health in an equal way. The model of Tannahill was criticized as being explicitly within the reductionist model (Rawson, 1992).

The scientific model in that it pays insufficient interest to network-primarily based factors. In reaction to these opinions, Education in his definition includes health education and interventions designed to promote empowerment, such as resilience, self- esteem, and life skills. Services and amenities include preventative care, while products include those that enhance health along with those that damage it (Tannahill, 2009).

The appropriateness of combining health promotion and disease prevention in arriving at a concept and developing a framework for District planning was recently highlighted in this journal (Pledger G & Watson H, 1986). This isn't a new concept. Prevention has always been at the heart of the work of health promotion groups/teams and the like (Tannahill , 1985) (indeed, 'health promotion' has all too frequently been a repackaging of preventive medicine).

Furthermore a comprehensive model of health promotion, incorporating prevention, presented at the 1984 Autumn Conference of the Faculty of Community Medicine, has been published elsewhere, (Tannahill A, 1984; Tannahill A, 1985) and has gained widespread popularity. The present paper serves to bring this model to a wider audience, to present developments within and around the construct, and to demonstrate its practical applicability in shaping health promotion action.

2.1.1. The model of Tannahil

In keeping with the concept (Tannahill A, 1985), fitness merchandising includes three overlapping regions of activity: health schooling, prevention, and protection the first two of these phrases are famous and were mentioned intensive someplace else (Tannahill A, 1985; Tannahill A, 1986).

Health protection consists of felony or fiscal controls, other laws or rules, or voluntary codes of practice geared toward enhancing suitable fitness and/or stopping unwell health. That is very an awful lot the subject of the superb public fitness regulatory culture, but the high-quality measurement of properly-being is integrated into the spirit of the definition of fitness by using the sector fitness enterprise. (WHO, 1948).

The model has been widely cited or adopted (Naidoo, 1994; IIHP, 2001). It has been used in undergraduate and postgraduate teaching in and beyond the

UK, and specimen essays/case studies can be bought through various commercial websites. On the other hand, the model has been described as representing ‘simplistic linguistic juggling’(Rawson, 1992).

He has also heard it criticized as not being a model in the sense of a particular approach to health promotion. However, he intended it as a uniting construct rather than the encapsulation of a single ideology, and as a counter to the sterile argument that health promotion and prevention should be seen as separate, even opposing, fields of endeavour (an example of a tendency in public health to waste time, energy and opportunities through a divisive ‘this or that’ mindset, when more would be gained through an integrating development has been increasing attention to the place of clinical services and pharmacological treatments in prevention. Also, the explicit focus in modern-day public health policy on reducing health inequalities and improving life circumstances is consistent with health protection as cast within the model, incorporating fundamental aspects of public policy making such as housing, employment and tackling poverty(Downie,1996). Such examples help to explain why the model has continued to be used in teaching and training.

Moreover, its applicability to health, disease and behaviour topics, lifestages, population groups, settings and geographical areas alike is a practical strength in clarifying the scope of health promotion action with a range of students and professionals. That said the model does not wholly cover community-based and community-led efforts to improve health, except insofar as these are fostered through policy making, contributed to through collective health education, or manifested in preventive services. A relevant point here is that at the time the model was devised, health-related community development was presented in literature as an approach to health education (Hopson & Scally, 1981).

One account of the model described its origins as lying ‘clearly within a medical context. However, I believe that it has helped people from medical or other clinical backgrounds to recognize the non-clinical dimensions of health promotion, and people from non-clinical backgrounds to see the place for clinical-type interventions as part of the overall mix. It has been interesting to consider how the model has withstood the tides of change. Strikingly, the prevailing vocabulary has undergone another transformation, in the UK at least: just as ‘health promotion’ eclipsed older terms two decades ago, it has now been largely superseded by ‘health improvement’(Beattie, 1996).

Again, an abrupt shift has brought confusion: health improvement is variously seen as a field of activity, a goal, or both. I welcome the emphasis on ‘health improvement’ as a uniting goal for prevention, enhancement of positive health, and a population perspective on treatment and health care. Nonetheless, I still see value in taking ‘health promotion’ to cover the first two of these things; and the term remains in use internationally, as seen for instance in the name and work of the International Union for Health Promotion and Education. Another semantic trend has been the application of ‘health protection’ to efforts to control infections and environmental hazards. I took the term, with a wider meaning, from the USA, and defined it as ‘legal or fiscal controls, other regulations and policies, and voluntary codes of practice(US Department of Health. 1978).

A number of developments in health promotion/ health improvement can be construed as practical demonstrations of the model’s spheres and domains. Taking tobacco control as an illustration, the health protection sphere has been exemplified by the legislation to make enclosed public places smokefree. Within prevention, there has been unprecedented investment in specialist smoking cessation services. Health education has raised awareness of the dangers of active and passive smoking, encouraged smokers to use smoking

cessation services, and promoted support for tobacco control among the public and decision makers. The positive health aspects of the model were not been highly visible in the tobacco control drive. In dealing with the largest single preventable cause of serious ill-health and premature death, it has been important to make a case for action based on harm. Nevertheless, smoking cessation services should highlight positive health benefits of not smoking, and foster 'positive health attributes' of the sorts mentioned in the description of the model's positive health education domain (Tannahill, 2000).

2.1.2. The link of the model with public health

It became recommended to the writer that the version can be implemented to the public health area at the least as nicely, conventional public health activities (which includes the manipulate of communicable illnesses, as well as 'new public health' are included. As a result, a proposal to the Acheson Inquiry was made recommending that the notion be used as a theoretic and practic foundation for public health (Tannahill, 1988).

2.1.3. The model in action

The concept works best in key contexts and among important populations to build integrated health promotion/public health programs (e.g.workplace, disadvantaged areas, primary care) (as an example unemployed humans, vintage humans). It can, however, be utilized as a foundation for intervention on a specific condition, whether it's a result of activities (smoking, eating an unhealthy diet) or an accident (for example coronary heart disease). Using smoking as a behavioral subject will now be explained using the model (Tannahill, 1988).

Within health promotion/public health, seven areas of operation (numbered) can be delineated. The more developed element of smoking and prevention (and thus more immediately understandable)

Preventive fitness training This quarter requires smoking discouragement and selling using smoking cessation offerings due to the fact tobacco is accountable for unwell-fitness and premature loss of life (Tannahill 1988). Preventive offerings inside the context of smoking, those encompass the prescription of nicotine-containing chewing gum, and smoking cessation clinics/organizations. Preventive fitness protection This domain includes, as an instance, monetary and legislative measures aimed at lowering the toll of smoking-related unwell-health (together with tax increases and income and merchandising controls) in addition to smoking manage rules, mainly in smoking locations (for example the place of work or public places) (Tannahill 1988).

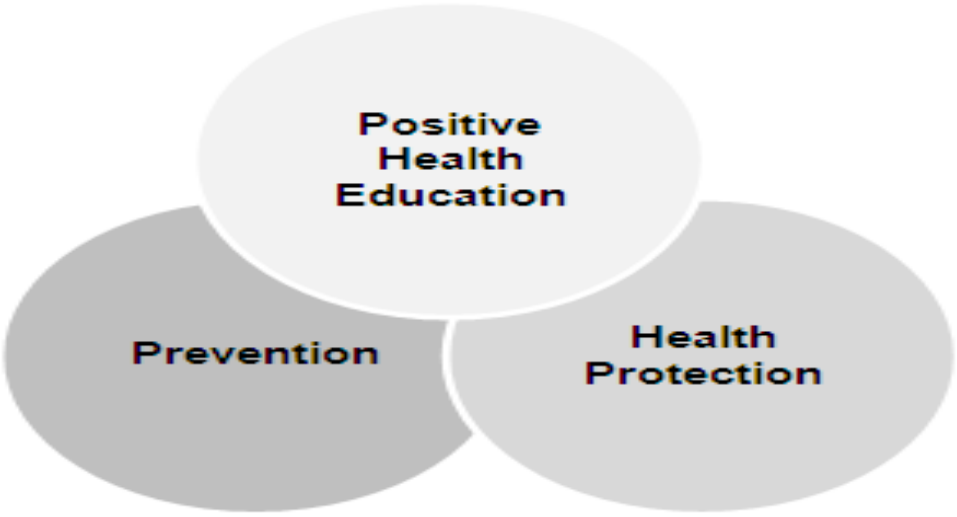
Fitness merchandising and training with a focal point on prevention This involves advocating for health-prevention measures and fostering a social environment that supports such efforts. A noteworthy instance of such health training training addressed to all individuals of Parliament and other health policymakers is "The huge Kill" by way of extending beyond the 'bad' cognizance of prevention and into the high-quality measurement of health, 3 additional classes can be described (Roberts JL & Graveling PA, 1985).

The high-quality and preventative advantages of fitness education on this way are not restrained to any unique area of health promoting: the roots of a wide variety of unhealthy behavior examples (which includes cigarette smoking, the usage of illicit capsules, the misuse of alcohol). There is a lot in common, which is why comprehensive health promotion programs that focus on the underlying idea rather than isolated preventive issues are so important. This crucial health education issue was not sufficiently established in prior presentations of the approach. (Tannahill, et al., 1988).

A safe and healthy environment Tannahill: Instead of a reduction in the risk of disease caused by active or passive smoking, health promotion and

public health 51 can legitimately be an improvement in the environment for nonsmokers. The major purpose of anti-smoking policies is to persuade people to quit smoking (e.g. on NHS premises) (Tannahill 1988).

Figer 2.The Tannahill model of health promotion



2.2.: Tetanus

2.2.1. Disease History

Tetanus has been regarded in history, all through time, with documents noting tetanus symptoms found from 1500 BC in Ancient Egypt, but are thought to have been copied from as early as 3000 BC. While there was a general understanding that the disease came from something infecting an open wound, many ideas for treatment were not beneficial, such as early Chinese physicians needling patients above the ears around 300 BC, Hippocrates' ideas in Ancient Greece of promoting sweating through drinking strong wines and being wrapped in oil soaked cloths, and ideas in the Renaissance of covering the patient with manure (Hayek, 1976).

The 19th century was revolutionary for tetanus research, as the disease was first replicated in 1884 through producing tetanus in animals, and pure cultures of tetanus bacillus were acquired soon after to study. These studies led

to Kitasato and Emil von Behring among others discovering the tetanus antitoxin in 1891, something that greatly reduced deaths due to tetanus after being administered in World War I (Ralph, 1942). In 1924, the first tetanus toxoid was developed and was given to all U.S. soldiers prior entering World War II, being eventually widely administered as the tetanus vaccine in the late 1940's (Ralph, 1942). National report of tetanus cases began in the 1940's as well, allowing the decline in tetanus cases over the next half century to be noted(Amanda, 2008).

Tetanus was relatively well understood in the early twentieth century. With the new discoveries found between the 1880's and 1920's, tetanus was known to be caused by the bacteria tetanus bacillus, which is an anaerobic organism that enters the body through subsurface wounds. In addition, there was knowledge of contraction of tetanus being through contamination of the wound with soil, due to puncture wounds, wounds entering joints, or through other subsurface wounds, such as surgical incision sites, that were not properly treated (USSGO, 1940).

While there was ability to destroy the bacteria through antiseptics, it was known to be unable to be destroyed in spore form, due to its ability to live through a wide range of temperatures. This information is relatively true to today, with most discrepancies between the times being small, such as many of the articles of the early to mid-twentieth century referring to tetanus as tetanus bacillus, with few calling it Clostridium tetani as it is officially referred to as today (USSGO, 1940).

There is also a wider description of causes today as risks and dangers in society have changed, such as contraction due to non-sterile needles in drug use, body piercing, and tattooing. Recent articles also provide more information on the different kinds of tetanus, being general, local, cephalic,

and neonatal, describing the specifics of each as well as how common each one is (Ed, 2008).

The experience of having tetanus, if acquired, is very painful and incessant. After contraction of the disease, the incubation period is around 2-21 days, with symptoms tending to start around the seventh or eighth day.The first symptoms would be spasms in the muscles near the location of the wound, or tightness in the jaw, in which the spasms would spread throughout the body as the bacteria travel through the bloodstream. Swallowing can become difficult and stiffness and pain may occur in the muscles of the shoulders, neck, and back, with additional spasms possibly spreading to the muscles of the arms, legs, and abdomen, there can be other symptoms too, including fever, sweating, high blood pressure, and rapid heart rate (Ed, 2008).

The treatments for tetanus created in the early twentieth century completely altered the prevalence of the disease. The discovery of the tetanus antitoxin completely changed its effects in war, with soldiers in battle being the primary victims to the disease prior. In the Civil War, one of every 500 men died of tetanus by sustaining wounds during battle and then becoming infected with tetanus. In World War I, there was less than one case that occured for every 5000 wounded, due to the fact that every wounded soldier in the U.S. troops received a prophylactic injection of the tetanus antitoxin. To create the antitoxin that was distributed, a tetanus toxin was injected into horses who form antitoxins to protect themselves from the poison. The resulting antitoxins created a serum that could be obtained from the horse containing the antitoxin and be used for treatment in humans (Krantz, 1931).

While this was devastating in the 1800's due to lack of treatment, articles of the 1900's urged those injured on the Fourth to seek treatment to prevent the onset of tetanus, eventually reducing the number of deaths (John , 2010). In addition, there was little regulation by public health officials of tetanus due

to it not being contagious. When looking at the sanitary code from New York City in 1940, tetanus was mentioned as a communicable disease, but there were no specific regulations for it, unlike the majority of other communicable diseases (City of New Yourk, 1940).

The discovery of the tetanus antitoxin and toxoid transformed tetanus from being devastating in war to becoming one less trepidation in the minds of soldiers and the general population. This was tremendously helpful during both World Wars, as it greatly reduced deaths which created a better morale for both soldiers and their families. The advancements in science during the late nineteenth and early twentieth centuries caused this disease to become something extremely uncommon in places where vaccines are easily accessible, which helped to manifest the current health system that we know today.

Tetanus is acute, life-threatening disease caused by the Clostridium tetani bacterium that produces toxins. In the environment, tetanus germs are widespread and transported, and occur when germs penetrate the body, typically through a wound of a puncture sort, but often through minor wounds such as scratches. The use of injections of drugs in the UK is an increasingly popular route of transmission (Hahne S, et.al., 2006).

Tetanus is a bacterial infection characterized by muscle spasms, also known as lockjaw. The spasms begin in the jaw in the most common form, and then progress to the rest of the body. Usually, each spasm lasts a few minutes and spasms often occur for three to four weeks Spasms can be sufficiently severe to cause bone fractures. Other symptoms of tetanus include headache, fever, difficulty swallowing, sweating, elevated blood pressure, and a rapid heart rate. Symptoms may appear months later, usually three to twenty one days after infection recovery and about 10% of cases are deadly (Atkinson &William, 2012; TSC, 2013).

Tetanus, caused by clostridium tetani (an obligate, gram positive bacillus whose spores contaminate wounds), is as- sociated with high mortality especially in poor countries despite availability of a cheap, safe and efficacious vaccine. Wounds leading to tetanus these days are less severe and often trivial - the serious wounds are generally given better medical attention with immunization coverage. In 15 - 30% of tetanus cases, there is no evidence of a recent wound, and the source of tetanus is reported as unknown. In some others, the portal of entry of tetanus may be atypical such as infection of skin and middle ear, dental caries septic abortion or intramuscular injection. WHO focus has been on eliminating maternal, neonatal and childhood tetanus via immunizations during pregnancy. Prevention of tetanus is achievable via vaccination and good wound care. However, teenagers and young women indulging in criminal (induced) abortion are at increased risk of tetanus as they are not, routinely, given tetanus vaccine before, during or after the procedure (Burgess , 1992).

An estimated 5% of all maternal deaths worldwide are caused by maternal tetanus and an estimated 90,000 women die from puerperal infections caused by unclean delivery practices every year. (MNTE, 2005). Around 200,000 neonates and 30,000 women died of tetanus in the year 2000 alone, while around 207 million women are still at risk of developing tetanus, despite the fact that it can be easily prevented through vaccination. (Eliminating maternal and neonatal tetanus, 2003; The power of vaccination, 2000).

Demographic and Health Surveys in various countries show the relationship between household wealth and vaccination coverage rates (Gwatkin D, et.al., 2000). In most countries, vaccination coverage in the poorest quintile is much lower than those living in the wealthiest quintile. Knowledge about TT vaccination and antenatal care visits has a significant effect on TT coverage (WHO, 2003).

Tetanus is caused by a bacterial infection called Clostridium Titani which can be found in dirt, saliva, dust, and compost. The germs enter the body by a skin fracture, such as a wound or a contaminated object. It creates toxins that cause natural muscle spasms to become worse. The disease is not disseminated via diagnosis, which is based on indications and symptoms (Atkinson&William, 2012; TST, 2013).

Tetanus may be prevented by way of vaccination with a vaccine against tetanus. Each vaccination and tetanus immune globulin are recommended for those with a major wound who have had less than three doses of the vaccine. The wound should be cleaned and any dead tissue removed. Tetanus immune globulin or, if unavailable, intravenous immunoglobulin (IVIG) should be used in those who are infected. To control spasms, muscle relaxants may be used. If a person's breathing is affected, mechanical ventilation may be required (Atkinson&William, 2012; Tetanus For Clinicians, 2013).

Tetanus occurs around the world, but as the soil contains a lot of organic matter, it is more widespread in hot and humid climates. There were about 209,000 accidents and about 59,000 deaths worldwide in 2015.(VosT, et.al, 2016; Wang H, et.al., 2016).This is less than 356,000 deaths in 1990 (Naghavi M,et.al., 2015). In the United States, there are about 30 cases annually, not nearly all of which have been vaccinated (CDC, 2019). Hippocrates described the disease early in the fifth century BC, and Antonio Carl and Giorgio Raton identified the cause of the disease at the Turin University of in 1884, and a vaccine develop in 1924 (Atkinson&William, 2012).

A have a look at of tetanus epidemiology and immunity in Australia discovered that the aged had been specially liable to the sickness: 82/106 (77 percent) of notifications with a documented date of delivery were born earlier than 1939. women accounted for forty three of the 70 times with sex over the

age of sixty five. (incidence charge 1.fifty three in line with a hundred,000 females and 1.19 per one hundred,000 in adult males). whilst there seemed to be below-reporting of hospitalized and fatal cases, immunity changed into strong in the ones over 60, and common tetanus incidence had decreased during the last two decades (1993-2010) (Nowlan, 2019).

In Australia, tetanus vaccine was initially given to members of the military forces in 1939, while DTP vaccine was first given to neonates in 1953. (Although booster dosages did not become available until until 1975.) One out of every five persons over the age of 50, particularly females, had adequate antitoxin levels, which linked to disease incidence. Handiest one third of these now not protected by means of the youth immunization software had had 3 or more doses of tetanus vaccine, with the majority of those born before 1950 (Lu X, et al., 2018).

One cause of the distinction in senior male and female immunity is that traditionally, ladies had been immunized much less regularly all through navy responsibility or as part of wound remedy for occupational or life-style-related wounds. Alike, all tetanus-related deaths in the United Kingdom between 2001 and 2014 occurred in adults over 45 years old who were not fully immunized. 8.8% of cases with a proven vaccine background were properly immunized for their age, 50.0 percent were partially immunized, and 41.2 percent were not immunized at all. The injection of a tainted batch of illegal drugs was related to a cluster of seven instances in the UK in 2003/2004, and ‘folks that inject drugs' are officially categorized as a class at expanded danger of tetanus (PHE, 2013; Collins, et al., 2016).

In the United Kingdom, milder cases of tetanus were seen in partly vaccinated people. As a result, the wide variety of cases or deaths because of tetanus might be underestimated if tetanus isn't dealt with as part of the

differential analysis for hospitalization due to its rarity, as has been found in Australia. Between 1998 and 2006, there was an estimated 83 percent under-notification of tetanus in Australia (Collins, et al., 2016., Lu X, et al., 2018).

The percentage of refugees lacking established tetanus immunity who entered the Germany and other European nations from the Middle East varied from 25% for those under the age of 18, 28.8% for young adults, to 64.7 percent for those over 50. (Jablonka, et al., 2017). Although the refugee resettlement program immunizes a portion of refugees arriving in New Zealand, some asylum seekers may not be fully immunized. As a result, for wound care and catch-up immunization, it's important to be aware of the possibility of incomplete tetanus immunization in these classes (Charania, et al., 2018).

Iraq was classified by WHO as one of the countries that eliminated neonatal tetanus, according to the latest WHO data published in 2018 Tetanus Deaths in Iraq reached 138 or 0.08% of total deaths. The age adjusted Death Rate is 0.22 per 100,000 of population ranks Iraq (#68) in the world. (WHO, 2018). Hippocrates, who lived in the 5th century BCE, was the first to describe the disease. Antonio Carle and Giorgio Rattone of the University of Turin discovered the disease's cause in 1884, and a vaccine was developed in 1924. (Atkinson&William, 2012).

2.2.2. World Health Organization position on tetanus

The arena health employer (WHO) produced a tetanus vaccination position paper in February 2017 that focused on offering recommendation on the use of booster doses to make sure lifelong tetanus protection. Tetanus is still a problem in some elements of the arena, although it's far uncommon in growing international locations. Although focusing initiatives for infants and pregnant mothers in several low-income countries, the majority of infections

are neonatal and maternal, due to poor hygiene habits during and after childbirth among under-immunized women (WHO, 2017). In certain Sub Saharan African countries, tetanus has been linked to voluntary circumcision to reduce the risk of HIV infection (Paynter, 2018).

The WHO advises an excessive coverage of six doses of tetanus-containing immunizations beginning at six weeks of age, i.e. 3 foremost doses and 3 booster doses before maturity. The number one doses need to be separated via at least 4 weeks, with the 0.33 dose given on the age of six months. Booster doses need to receive inside the second year of life, nursery, and early formative years (ages nine-15), with a minimum of four years between booster doses (WHO, 2017).

2.2.3. Incubation period

Tetanus may have an incubation period of up to several months, but it is typically around ten days. The farther the damage site is from the central nervous system, the longer the time of incubation, in general. The shorter the time of incubation, the more serious the symptoms, signs usually arise in neonatal tetanus from 4 to fourteen days after start, with an average of round 7 days (Brauner JS, et.al., 2002).

On average, the sickness takes 3 to 21 days to incubate (PHE, 2020). The spores grow into toxin-producing tetanus bacilli in anaerobic circumstances. The neurotoxin travels to the spinal cord and brainstem via the blood and lymphatic systems, where it binds to interneurons in the host. It then binds to membrane proteins in neurons, inhibiting the release of inhibitory neurotransmitters that control anterior horn cell modulation and muscular contraction in the central nervous system. This causes muscle tension, contractions, and severe spasms, as well as peripheral neuropathy. (WHO, 2017; Yen & Thwaties, 2019).

Tetanus toxin also blocks neuronal control of adrenal-released catecholamine, leading the sympathetic pathway to become more active, resulting in tachycardia, perspiration, and hypertension (Yen & Thwaties, 2019). The influences on anterior horn cells, the brainstem, and autonomic neurons are lengthy-lasting, requiring the improvement of latest axonal nerve terminals throughout regeneration. As a result, tetanus commonly lasts 4 to six weeks (Sexton, 2019).

Usually ranges from 3 to 21 days, with a range from 1 day to several months, depending on the character, extent and location of the wound. The average incubation period is 8 days; most cases occur 14 days after exposure. In general, shorter incubation periods are associated with more heavily contaminated wounds, more severe disease, and a worse prognosis.

2.2.4. Four different forms of Tetanus:

2.2.4.1. Generalized Tetanus

It considers as the most common form of tetanus, comprising about 80 percent of cases, is generalized tetanus. Typically, the generalized form provides a descending pattern. Trismus, or lockjaw, Is the first symptom, and facial spasms are known as resource Sardonicus, followed by way of neck weak point, problem swallowing, and pectoral and calf muscle stress. high temperature, sweating, multiplied blood stress and episodic fast heart price are different symptoms. With the body shaped right into a unique kind referred to as opisthotonos, spasms can occur regularly and last for several minutes. Spasms last up to four weeks and are complete, The most common type of tetanus is generalized tetanus and accounts for around 80 per cent of cases. A descending pattern is typically described in the generalized model. Trismus, or lockjaw, and risus sardonicus, or facial cramps, are the initial signs, followed

by stiff neck, difficulty swallowing, and chest and leg muscle stiffness (Atkinson&William, 2012).

2.2.4.2. Neonatal Tetanus

Is a kind of architectural tetanus that affects neonates who are born to moms who have not been immunized. If the mother receives a tetanus vaccine, the babies develop unfavorable immunity and are protected (Farrar, et al., 2000). It typically occurs when the umbilical trunk is wounded and not treated, especially while the trunk is reduce the usage of a non-sterile tool. As of 1998, newborn tetanus become commonplace in lots of affluent international locations, accounting for more or less 14% (215,000) of all new child deaths (NT, 2014). In 2010, 58,000 new child newborns died around the arena. The variety of neonatal tetanus deaths decreased by way of 90 percent due to public fitness marketing campaign,The disease was virtually eliminated in all countries between 1990 and 2010 and by 2013, with the exception of 25 countries (Maternal and Neonatal Tetanus Elimination, 2005). In developing countries, neonatal tetanus is uncommon.

2.2.4.3. Local Tetanus

Local tetanus is a rare kind of tetanus in which people in the same anatomical location as the lesion have a continuous muscular contraction. Until it inevitably fades away, the contractions can last for several weeks. Generally, local tetanus is milder; only about 1 percent of cases are fatal, but the onset of generalized tetanus may precede it. (Atkinson&William, 2012).

2.2.4.4. Cephalic Tetanus

Is the rarest kind of tetanus (0.9-3 percent of cases) and affects only the head muscles and nerves (EMNT, 2014). (Doshi et al., 2015). It usually occurs after a head injury, such as a skull fracture. laceration (Del Pilar Morales, et al., 2014), eye injury, dental extraction, (Doshi et al., 2015), (Adeleye AO &

Azeez AL, 2012) and otitis (Ajayi E & Obimakinde O, 2011), but injuries to other areas of the body have been reported (Ugwu GI & Okolugbo NE, 2012). Facial nerve paralysis is most commonly involved, and can lead to lockjaw, facial paralysis, or ptosis, but it can also affect other cranial nerves. (Adeleye & Azeez 2012 ; Kwon, et al, 2013). Cephalic tetanus can advance to a more widespread type of disease (Kwon JC, et al, 2013).

Doctors may not be aware of the clinical appearance because of its rarity, and may not suspect that tetanus is the disease (Doshi et al., 2015). Treatment may be complex as symptoms may also correlate with the authentic infection that brought about the injury. Vertical tetanus is much more likely to be deadly than different types of tetanus, as development to generalized tetanus contains a fifteen-30 percentage fatality rate (EMNT,2014; Del Pilar Morales,et al.,2014; Kwon JC,et al, 2013).

2.2.5. Sings and Symptom

Tetanus starts with mild cramps in the jaw muscle often known as tetanus or hawthorn. Cramps may also occur in the facial muscles, leading to an appearance called risus Sardonicus. They can affect the chest, neck, back, abdomen, and buttocks. Back muscle spasms, called opisthotonos, sometimes cause curvature. Often the cramps on the muscles that aid breathing are reported, which may lead to breathing problems (Atkinson&William, 2012).

Prolonged muscle action induces rapid, intense and painful muscle group contractions, called "titanic". Muscle fractures and tears may be caused by these seizures. Fever, fatigue, insomnia, irritability, eating issues, breathing issues, burning all through urination, urinary retention, and lack of stool manipulate are other signs and symptoms (Tetanus - Epidemiology of Vaccine Preventable Diseases, 2020).

Even with treatment, in unvaccinated people and people over 60 years of age, mortality is higher in around 10 percent of people who die of tetanus. (Atkinson&William, 2012).

Generalized tetanus

The maximum not unusual and severe scientific variation of tetanus is trismus (lockjaw), muscle pressure, and painful muscle spasms. Clench your fists, arch your backs, stretch and abduct your arms, and widen your legs if you have widespread tetanic spasms. Constant spasms and rigidity might make breathing difficult (Hassel, 2013; Yen & Thwaties, 2019).

Autonomic dysfunction (when the autonomic nervous system fails), which produces tachycardia, hypertension, and sweating (which can occur in rapid succession with bradycardia and hypotension), are other extreme indications (Hassel, 2013).

Local tetanus

Tonic and spastic muscular spasms in a specific extremity or body area, usually around the injury site, characterize this condition. Localized tetanus can develop to generalized tetanus, however, this is not always the case (Hassel, 2013; Yen & Thwaties, 2019).

Cephalic tetanus

This is a less prevalent type of the illness. Cephalic tetanus, which affects only the cranial nerves at initially, can develop in patients who have suffered a head or neck injury, although other cranial tensions can also be involved. Patients can present with perplexing clinical findings such as dysphagia, trismus, and focal cranial neuropathies, which may lead to a stroke misdiagnosis. Patients with cephalic tetanus, like those with other types of local tetanus, can develop generalized tetanus (Sexton, 2019).

2.2.6. Cause of disease

Tetanus is caused by Clostridium tetanii, a tetanus bacterium (Atkinson&William, 2012). Tetanus, since C. tetani endospores are omnipresent, is an international health issue. "Endospores can be injected into the body through a puncture sfite (penetrating trauma). Because C. tetani is an anaerobic bacterium, it and its endospores thrive in settings where there is no oxygen, such as a puncture wound". Tetanus is not transmitted from one human to another (WHO, 2017;PHE, 2019; Yen & Thwaties, 2019). C. tetani is a gram positive, anaerobic, spore forming bacillus. It forms a terminal spore giving it a drum-stick appearance. C. tetani needs low oxygen tension for its survival and is very sensitive to heat. However, the spores are extremely resistant to heat and to the conventional antiseptics, being able to survive for many years in adverse conditions. The spores are widely distributed in nature and are killed by autoclaving at 121C for 10–15 minutes. Manure treated soil may contain large numbers of spores. They are found in the faeces of horses, sheep, cattle, rats, dogs, cats and chicken. In agricultural communities, a significant number of adults may harbour the organism. In intravenous drug users, the spores can also be located on the skin surfaces and in contaminated heroin (Mallick & Winslet, 2004).

Tetanus can be contracted in a variety of ways, including:

Burns caused by general sepsis, scrapes and animal bites (agricultural environment);

fractures that are compound;

Surgical contamination (the usage of non-sterile units and substances);

Cuts containing or not containing foreign objects;

Injury to the eyes;

wounds from gunshots;

Using taint medications in injections;

Body piercings;

Puncture wounds sustained in a polluted area (for example, gardening injuries);

Puncture wounds such as splinters and other puncture wounds (WHO, 2017;PHE, 2019; Sexton, 2019;PHE, 2020).

Inadequately vaccinated people are virtually always infected with the disease (Seo DH, et al.,2012). In hot, damp climates with soil rich in organic matter, it is more natural. Manure-treated soils can produce spores, as many animals such as horses, sheep, goats, dogs, cats, rats, guinea pigs, and chickens are widely spread in the intestines and feces (Atkinson&William, 2012), a large of human adults number can host the organism in agricultural areas.

Heroin addicts, especially those who injected the drug subcutaneously, are at a higher risk of acquiring tetanus on the skin's surface and in infected heroin, tetanus can rarely be contracted through surgical procedures, intramuscular injections, compound fractures and dental infections. Bites of animals will transmit tetanus (Atkinson &William, 2012).

Rust, especially rusty nails, is often associated with Tetanus. While tetanus is not caused by rust itself, objects that accumulate rust are often discovered outside or in locations that harbor anaerobic bacteria. In addition, the rough surface of rusty metal provides C. tetani with a habitat, while a nail provides a means of puncturing skin and delivering endospores deep inside the body at the wound location (Wells CL & Wilkins TD, 1996).

An endospore is a non-metabolizing survival shape that, if exposed to the right conditions, begins to metabolize and reason infection. Stepping on a

rusted nail (or any other puncturing device) might result in tetanus infection because there may be a low-oxygen (anaerobic) atmosphere underneath the skin, and the puncturing object might carry endospores to a suitable habitat for growth (Edmonds& Molly, 2015). It's a popular fallacy that it causes rust and that a rust-free nail puncture isn't dangerous (Todar, Kenneth, 2013).

2.2.7. Pathogenesis

C. tetani usually enters the body through a wound. In the presence of anaerobic conditions, the spores germinate. Toxins are produced and disseminated via blood and lymphatics. Tetanospasmin, also referred to as tetanus toxin, acts at several sites within the central nervous system, including peripheral motor end plates, the spinal cord, and the brain, and in the sympathetic nervous system. The typical clinical manifestations of tetanus are caused when tetanus toxin interferes with the release of neurotransmitters, blocking inhibitor impulses. This leads to unopposed muscle contraction and spasm. Seizures may occur, and the autonomic nervous system may also be affected (Hakim, et al., 2021).

C. tetani usually enters the body through a wound. In the presence of low oxygen tension, spore germination occurs. The organism secretes two toxins namely tetanolysin and tetanospasmin. Tetanolysin can damage the viable local tissue surrounding the infection and optimises the conditions for bacterial multiplication. A powerful neurotoxin, tetanospasmin is produced and dissemination is by retrograde axonal spread to the central nervous system. The toxin becomes bound to gangliosides within the central nervous system, where it suppresses inhibitory influences on motor neurons. It inhibits the release of glycine and gamma-amino butyric acid (GABA). This can lead to unopposed muscle contractions and spasms, even seizures may develop. The autonomic nervous system may also be affected due to direct stimulation and

autonomic over activity is associated with a high mortality (Mallick & Winslet, 2004).

2.2.8. Laboratory Testing

The diagnosis of tetanus is entirely clinical and does not depend upon bacteriologic confirmation. C. tetani is recovered from the wound in only 30% of cases and can be isolated from patients who do not have tetanus. Laboratory identification of the organism depends most importantly on the demonstration of toxin production in mice(CDC, 2006).

2.2.9. Diagnosis

Currently, blood tests, no available to diagnose tetanus. Diagnosis of tetanus is made based on the presence of tetanus symptoms rather than the isolation of the bacterium, which only recovers from the wound in 30% of cases and can be separated from persons who do not have the disease. Tetanospasmin production in mice is the only way to identify C. tetani in the laboratory (Atkinson&William, 2012). If no other diagnosis has been made, having currently suffered head trauma may want to mean cephalic tetanus.

The "spatula test" is tetanus clinical test involving touching and examining the impact of the posterior pharyngeal wall with a soft-tipped tool. The involuntary contraction of the jaw (biting down on the "spatula") is a positive test result and a negative test result will generally be a gag reflex seeking to remove the foreign object. A short article in The American Journal of Tropical Medicine and Hygiene reports that the spatula test had a high specificity (zero false-positive test results) and a high sensitivity in an affected subject research sample , a positive test is for infected people (Foran P,et al.,1994).

2.2.10. Nursing Diagnosis of Tetanus

Symptoms of tetanus occur when the bacterium Clostridium tetani infects the body. As we know that the bacterium Clostridium tetani tetanus as a cause of contamination of wounds from the attack through the soil, dust, animal feces, and so forth. If there are injuries and is expected to have been contaminated, tetanus symptoms need to be considered whether the person is infected or not. A characteristic feature of tetanus is a stiffness and muscle spasms. If this happens to someone who is expected to be contaminated (eg a few days ago stepped on a nail) to worry that the person is stricken with symptoms of tetanus. In the general tetanus, early complaints may include irritability, muscle cramps, muscle pain, weakness, or difficulty swallowing are usually seen (Martin&Corzine, 1942).

Nursing Assessment - Nursing Care Plan for Tetanus

History of present illness: a severe injury, burns and inadequate immunization.

- *Respiratory System: dyspnea, cyanosis and asphyxia due to respiratory muscle contraction.
- Cardiovascular System : dysrhythmias, tachycardia, hypertension and bleeding, initially the body temperature 38-40 ° C or febrile up to the terminal 43-44 ° C.
- Neurologic System: irritability (early), weakness, convulsions (late), paralysis of one or several nerves of the brain.
- Urinary System l: urinary retention (bladder distension and urine output does not exist / oliguria)
- Digestive System: constipation due to no bowel movements.
- Integument and muskuloskletal System: pain, tingling at the site of injury, sweating, initially trismus, muscle spasms face with increasing

contraction eyebrows, risus sardonicus, stiff muscles and difficulty swallowing.

- If this continues there will be the status of general convulsions and seizures.
- IT Is a well-known fact that death in patients with tetanus frequently is due to convulsions, therefore every possible precaution should be taken to prevent their occurrence. The patient should be placed in a quiet darkened room and protected from every source of external stimulation, including sudden noise, bright lights, jarring of the bed and incompetent handling. One usually thinks of a convulsion as an episode in which the patient's extremities shake, froth appears at the mouth, and consciousness may be either clouded or completely lost. In tetanus, however, tonic rather than clonic spasms are characteristic of the typical clinical picture. The thorax and abdomen become rigidly contracted and boardlike, the patient anxiously gasps for air, cyanosis and frothing at the mouth follow, and the patient remains conscious throughout the attack. The nurse's responsibility is to aid in the prevention and the treatment of convulsions. Sedation is given either before or at the very onset of a spasm. The early symptoms and signs which precede a convulsion consist of restlessness and significant rigidity of skeletal muscles (Martin&Corzine, 1942).
- **control of convulsions** Avertin with amylene hydrate (avertin fluid) and sodium amytal seem to be the preparations of choice. Avertin with amylene hydrate is given as a retention enema. The rectal tube is lubricated with mineral oil. Vaseline should not be used as it may occlude the opening in the tube. The nurse ordinarily administers sodium amytal orally or rectally, occasionally by the intramuscular route, but never by vein. To avoid delay in the administration To avoid delay in the administration of avertin with amylene hydrate, the rectal

tube must be kept inserted in the rectum at all times. This is of the greatest importance, for during a convulsion the sphincter muscles contract making the passage of a rectal tube either difficult or impossible (Taylor, et al, 2013).

The volume of solution of avertin with amylene hydrate administered at any time is determined by the severity of the disease and the weight of the patient. The nurse must advise the physician when additional stock solution is to be prepared. It is imperative that the nurse test the solution with congo red before each administration. A small amount of solution is poured into a test tube and several drops of congo red is added. If the solution remains a pinkish color it may be used. The appearance of a blue or violet color indicates the presence of toxic dibromacetaldyde which is formed when tribromethanol decomposes. When this occurs the solution must be discarded. This test with congo red is reliable only when distilled water has been used to prepare the solution of avertin with amylene hydrate. After the sedative drug is administered, sleep may or may not be induced. It is not essential that the patient fall asleep; rigidity and convulsions may be controlled despite the fact that the patient remains awake. Moreover, spasms may occur even though the patient falls asleep. If convulsions appear during sleep, death may follow. In view of these facts, the nurse must constantly be on the alert in order to detect signs of distress or hypertonicity of the body muscles. It is important to observe and gently palpate the thorax and abdomen, particularly the latter, to detect signs of increased muscular rigidity(Martin&Corzine, 1942).

If the patient experiences respiratory difficulty during convulsions it is exceedingly important to decide whether the distress in breathing is due to the spasms or to obstruction of the nasopharynx with secretions which cannot be swallowed. If secretions can be definitely blamed, they

should be removed by gentle suction and conservative amounts of sedative drug are administered as necessary. Alertness on the part of the nurse cannot be overemphasized. The physician and nurse must determine what dose of sedative drug is both safe and effective in controlling the signs and symptoms. Overdepression must be avoided, because it leads to the appearance of aspiration pneumonia, and inadequate sedation may result in sudden death from uncontrolled convulsions. Although the nurse may be given permission to administer a designated amount of the medication when early treatment is essential, it is the physician who must assume responsibility for formulating a schedule by which the nursing staff may be guided (Taylor, et al, 2013).

- **serum therapy** The responsibility of the nurse during serum therapy consists of the assembling of all equipment, assisting in the administration of the antitoxin, and the observing of the patient both during and after the injection of the serum. The patient must be adequately restrained. The antitoxin should be warmed for about fifteen minutes in water not above ioo degrees F. (37-70 C.). Overheating the serum reduces its potency and may lead to the development of untoward and alarming reactions. The injection of cold serum may cause pain and discomfort to the patient and may result in delayed absorption or even in the formation of a local abscess. When the serum is to be administered intravenously, it is important to avoid the use of excessively warm diluent. Ordinarily, 5 per cent solution of dextrose in physiological saline or Hartmann's solution is employed. The rate of flow should not exceed sixty drops per minute. The nurse must detect immediately both early and late reactions to antitoxin. Early reactions may occur within a few minutes to twenty-four hours after the injection of antitoxin. The signs and symptoms may be those of late serum sickness (described later in this paper) or those ordinarily thought of in reference to

immediate reactions, namely, fever, chills, generalized urticaria, difficult respiration, gastro-intestinal complaints, convulsions, cyanosis, and shock. If reactions occur during the intravenous administration of serum, the tubing should be clamped off while the nurse waits for the arrival of the physician. Epinephrine solution (I:I,ooo) should always be im mediately available, and the physician will frequently leave orders that it may be injected by the nurse if the physician does not see the patient promptly. In some instances, the injections of epinephrine must be supplemented with the administration of atropine sulfate. Maintenance of warmth, elevation of the foot of the bed, and control of respiratory difficulty by means of oxygen and respiratory stimulants and artificial respiration may be urgently indicated (Barber, 2018).

- **preventing pneumonia** Because of the fact that pneumonia is a frequent complication in cases of moderate to severe tetanus, prevention of pulmonary involvement must be one of the chief concerns of the nurse. It results from several factors one or all of which can, in great measure, be controlled or modified by proper nursing care. Chilling, frequently caused by profuse perspiration which occurs in most cases of tetanus, may be prevented by the use of frequent tepid sponging, the avoidance of drafts, and keeping the patient dry and comfortable. Prolonged rigidity of the thorax, which results in unsatisfactory aeration of the lungs, may be relieved to some extent by maintaining a quiet, darkened environment and by employing measures which make the patient more comfortable. If spasms appear, making the use of sedation necessary, inhalations of 5 per cent carbon dioxide in oxygen are given at periodic intervals to stimulate adequate pulmonary ventilation. The incidence and degree of hypostasis may be reduced by changing the patient's position each time sedative drugs are given. The patient should be supported on his side, avoiding the dorsal position as much as

possible. Elevating the foot of the bed may aid in preventing the aspiration of secretions from the upper respiratory tract. The use of gentle suction is justified provided this procedure does not excite the patient. Wiping the lips and front portions of the mouth and encouraging the patient to blow secretions from the mouth, aid in preventing aspiration pneumonia and respiratory distress. Slow careful administration of fluids orally usually prevents entrance of fluid into the lower portions of the respiratory tract(Taylor, et al, 2013).

- **fluid and caloric intake** The maintenance of an optimal fluid and caloric intake is highly desirable. However, rest and sleep must never be disturbed for this purpose. If sedation relaxes the patient and lessens the degree of trismus and pharyngeal spasm, liquids such as strained soup, eggnogs, highcaloric drinks, and fruit juices should be fed slowly. All fluids should be warmed because cold liquids may incite convulsions. Small amounts are to be fed when the patient awakens or is going under the influence of the sedative drug. Fluids are best given by means of a medicine dropper protected with a short rubber tip. In some patients, a straw or glass feeding tube, a spouted feeding cup, or a spoon may be more satisfactory. If a medicine dropper is employed, the fluids should be fed drop by drop. If the oral administration of fluids disturbs the patient, this method must be abandoned immediately and the fluid balance can be maintained by venoclysis. As the condition of the patient improves, soft and then solid foods are gradually added to the diet. Feeding by gavage is not ordered except in the occasional patient with a markedly swollen tongue(Martin&Corzine, 1942)..
- **treatment of local lesions** If surgical treatment of the wound is necessary, the usual aseptic technic employed in all surgical cases is routine. Dressings and other measures necessary in the care of wounds should, in most instances, be carried out shortly after the administration

of sedative drugs. Soiled and contaminated dressings are placed in paper bags and burned. Instruments and other used equipment are cleansed with soap and water rinsed in clear water and autoclaved (Martin&Corzine, 1942).

- **convalescent care** In the convalescent period the patient may suffer from a recurrence of former signs and symptoms and m'ay become as acutely ill as he was during the first days in the hospital. Serum reactions of the late type may occur as long as fourteen days after the injection of antitoxin, and may precipitate alarming or fatal spasms. Fever, urticaria, itching, arthritis, adenitis, abdominal pain, nausea, and vomiting may cause marked discomfort of the patient well after convalescence has begun. Repeated injections of adrenalin are indicated, calamine lotion, or other antipruritic preparations may be applied to the skin and sedatives administered. After the patient is apparently free from seizures and marked spasticity, he is encouraged to sit up for short intervals and in due time he may stand and walk.
- The convalescent period sometimes taxes the ingenuity of the nurse. She must be alert to detect evidences of slight fatigue. Reading to the patient is the first recreational diversion advised. Gradually the patient may be given other no exciting recreational material which requires relatively little physical activity. The relatives, who thus far have been barred, may be allowed to visit the patient for a few minutes at a time provided their presence does not excite. This period also affords the nurse added opportunity for teaching the patient. The nursing care of a patient with tetanus presents an interesting challenge to the nurse who must be constantly on the alert and must be able to recognize and anticipate changes in the patient's condition. Even the failure to recognize the onset of a convulsion may result in the death of the patient. But what a satisfaction results when the patient begins his convalescence and is able

once more to smile, even if some spasticity is still present and the smile does still retain some of its "sardonic" qualities(Martin&Corzine, 1942).

2.2.11. Prevention

Recoverd from certain "acquired tetanus" does not normally result in imunity to tetanus, unlike many infectious diseases. This is due to the tetanospasmin toxin's intense potency. Tetanospasmin is likely to be lethal until it triggers an immune reaction.

Tetanus may be avoided by tetanus toxoid vaccine (Apte NM & Karnad DR,1995). The CDC recommends that adults receive a booster vaccine every 10 years, and in certain areas, normal care procedure is to give the booster to any person with a puncture wound who is unaware of when he or she was last vaccinated or whether he or she had less than three lifetime doses of the vaccine. However, the booster does not prevent a potentially fatal case of tetanus from the current wound, as tetanus antibodies may take up to two weeks to form(DTP, 1991).

The tetanus vaccine is also used in children under the age of seven as a combination vaccine, the DPT/DTaP vaccine, which often contains diphtheria and pertussis vaccines. The Td (tetanus and diphtheria) or Tdap (tetanus, diphtheria and acellular pertussis) vaccine is widely used in adults and children over the age of seven(Apte NM & Karnad DR, 1995).

Countries that has Tetanus among mothers and babies has been eliminated, according to the World Health Organization. For at least two years, a rate of less than one case per 1000 live births is required for certification.. In 1998, 3,433 cases of tetanus were reported in newborn babies in Uganda; 2,403 of these died. Uganda was accredited in 2011 as having removed tetanus after a massive public health campaign (Porter JD, et al., 1992).

One of the most important prevention steps in medicine is successful immunization with a tetanus toxoid. prevention one tetanus case saves enough fitness care prices to immunize severa thousand individuals. energetic immunization with 3 IM injections (10 lyophilized units, 0.5 mL) of alum-adsorbed tetanus toxoid offers almost total immunity for five years. little one ordinary immunization begins at 6 weeks to two months of age with different vaccines at periods of 1 to 2 months(Nathan and Bleck, 2011).

If you haven't had a tetanus booster within the final 5 years, you have to get one after an coincidence that would set off tetanus (infected wound, puncture, burn, frostbite, avulsion, and weigh down harm). If no Td vaccination has been administered within the final 10 years, a wounded patient ought to take delivery of the adsorbed Td vaccine. If no previous immunization records is available, a route of 3 monthly Td pictures must be administered (Kessler, et al., 2014).

A patient with no clear previous vaccination history should also be given HTIG (250-500 IU), for the most part if the wound is probable to cause tetanus. Most scholars believe that as long as separate sites are used, both HTIG and tetanus toxoid can be administered concurrently. In the case of tetanus-prone wounds, HTIG is administered, e.g. fracture wounds, deep penetrating wounds, bite wounds, wounds containing foreign bodies, soil-contaminated wounds, infected wounds, extensive tissue damage (contusions, burns). Children and adults: a single dose of 250 IU; 500 IU if more than 24 hours have passed; HTIG, along with the tetanus vaccine, should be given in a different form as soon as possible after injury (Krausz, 2007).

2.2.12. Complications

Interference with breathing can occur due to aspiration and laryngospasm. Prolonged spasms, contractions or convulsions may lead to

fractures of long bones or of the spine. Cardiovascular complications namely tachy/bradycardia, arrhythmias and hypertension may also occur due to stimulation of the autonomic nervous system. Nosocomial infections are common in these patients because of prolonged hospitalisation. Infections may occur from indwelling catheters, hospital acquired pneumonia, pressure sores, aspiration pneumonia, deep vein thrombosis and pulmonary embolism can also occur (Mallick & Winslet, 2004).

Table.2.1. Complications of Tetanus occur (Mallick & Winslet, 2004).

Systems	Complications
Respiratory	apnoea, type I respiratory failure (atelectasis, aspiration pneumonia), type II respiratory failure (laryngospasm, excess sedation, truncal spasm), acute respiratory distress syndrome, complications of ventilation and tracheostomy
Cardiovascular	tachy/bradycardia, hypo/hypertension, myocardial ischaemia, arrhythmias, asystole, cardiac failure
Renal	infections, renal failure
Gastrointestina	ileus, gastric stasis, diarrhoea, haemorrhage
Musculoskeletal	vertebral fracture and tendon avulsions during spasms,

	temporomandibular joint dislocations, nerve palsies
General	weight loss, thromboembolic phenomenon, decubitus ulcers, multiple organ dysfunction syndrome(MODS)

Nosocomial infections are common because of prolonged hospitalization. Secondary infections may include sepsis from indwelling catheters, hospital-acquired pneumonias, and decubitus ulcers. Pulmonary embolism is particularly a problem in persons who use drugs and elderly patients. Aspiration pneumonia is a common late complication of tetanus, found in 50% to 70% of autopsied cases. In recent years, tetanus has been fatal in approximately 11% of reported cases. Cases most likely to be fatal are those occurring in persons age 60 years or older and unvaccinated persons. In about 20% of tetanus deaths, no obvious pathology is identified and death is attributed to the direct effects of tetanus toxin(CDC, 2005).

As a result of repeated muscle spasms, fractures and tendon rupture can occur in patients with severe tetanus, as well as rhabdomyolysis (the rapid breakdown of damaged skeletal muscle). Muscle rigidity and spasms can make swallowing and coughing more difficult, which may result in the inhalation of secretions or contents of the stomach. This can lead to a lower respiratory tract infection (also known as aspiration pneumonia(Cottle, et al., 2018).

Generally, severe cases of tetanus require admission to critical care for long periods of time (up three to five weeks). As a result, these patients are at a higher risk of developing nosocomial infections, ventilator-associated pneumonia and gastrointestinal haemorrhage (Yen & Thwaties, 2019; Cottle, et al., 2018). The lack of immobility over several weeks also increases their

risk of developing a thrombosis, meaning patients must also receive appropriate thromboprophylaxis (Cottle, et al., 2018). Also complications may include:

Fractures: Muscle spasms and convulsions can often lead to bone fractures in serious cases.

Aspiration pneumonia : occurs when secretions or stomach contents are inhaled, resulting in a lower respiratory tract infection and pneumonia.

Laryngospasm: is a spasm of the voice box that can last up to a minute and cause breathing problems. The patient can suffocate in serious cases.

Tetanic seizures: A person with tetanus can experience fits if the infection spreads to the brain.

Pulmonary embolism: is a disorder in which a blood artery in the lungs becomes blocked, impairing breathing and circulation. The patient will need oxygen and anti-clotting medication immediately.

Acute renal failure (extreme muscle spasms): Severe muscle spasms can cause skeletal muscle to be damaged, allowing a muscle protein to leak into the urine. This can result in kidney failure. (Tetanus - symptoms and complications, 2013).

2.2.13. Treatment of Tetanus

The treatment of tetanus has three primary objectives: (a) to overcome disturbances in the body due to the tetanus toxin already bound to the central nervous system; (b) to neutralise toxin still circulating in the blood; and (c) to eradicate the tetanus bacillus itself. The general management of patients with tetanus involves the control of reflex spasms, the prevention of intercurrent

infection, the control of fluid and electrolyte balance, and the maintenance of the patients strength. The key to controlling muscle spasm is sedation and muscle relaxation. In cases of mild or moderate severity this may be achieved by a combination of treatment with drugs such as phenobarbitone, chlorpromazine, and diazepam. In more severe cases, however, total paralysis by curarisation and application of intermittent positive pressure ventilation in the tracheostomised patient is usually required (Ahmadsyah & Salim,1985).

Acute treatment of tetanus is based on wound cleaning and antibiotic eradication of Clostridium tetani, e.g., with intravenous metronidazole, 500 mg three times daily, or penicillin, 100,000–200,000 IU/kg/day (Ganesh,et al.,2004; Campbell,et al., 2009). Treatment is continued for seven to ten days. The notion that one should avoid penicillin because of a possible inhibition of the GABAA receptor, which could increase muscle rigidity, does not seem to be supported by studies. Tetanus antitoxin is given once intramuscularly; doses of 500 IU, 3000 IU, or higher have been used, but it is debatable whether the higher doses are more effective (Blake, et al.,1976).

The antitoxin is given to inactivate any free tetanus toxin. The toxin that has been taken up into nerve terminals is probably not available to the antitoxin. Therefore, muscle symptoms may develop further, although the clostridia have been eradicated and antitoxin has been given, because tetanus toxin continues to be transported axonally and trans-synaptically and to cleave VAMP. Intrathecal administration of antitoxin, e.g. via lumbar puncture, could inactivate tetanus toxin during its trans-synaptic transport; a meta-analysis indicated that intrathecal administration was superior to the intramuscular route with respect to survival (Kabura, et al., 2006). Other treatment includes:

General measures: If at all possible, a separate wardn for tetanus patients should be created. Patient should be kept in a dark, shaded

environment and should be kept as free from visual and auditory stimuli as possible. All wounds should be washed and debrided according to the instructions. (Surveillance, 2010).

Immunotherapy: If possible, administer human TIG 500 units intramuscularly or intravenously (depending on the available preparation); in addition, administer an age-appropriate TT-containing vaccine, 0.5 cc by intramuscular injection, at a different region. [Because tetanus sickness does not result in immunity, patients who have not previously had a primary TT vaccine should have a second dose 1–2 months following the first dose, followed by a third dose 6–12 months later (Ganesh,et al.,2004).

Antibiotic treatment: Penicillin G (100,000–200,000 IU/kg/day intravenously, divided into 2–4 doses) is superior to metronidazole (500 mg per six hours intravenously or by mouth). Also effective are tetracyclines, macrolides, clindamycin, cephalosporins, and chloramphenicol. (Surveillance, 2010).

Muscle spasm control: The medications of choice are benzodiazepines. To achieve spasm control without undue sedation or hypoventilation, titrate intravenous diazepam or lorazepam in 5 mg or 2 mg increments for adults (start with 0.1–0.2 mg/kg per 2–6 hours for newborns and titrate upward as needed). Large doses (up to 600 mg per day) may be needed. Oral preparations are an alternative, but they must be used in combination with close supervision to prevent respiratory distress or arrest (Thwaites et al., 2006).

Magnesium sulphate To control spasm and autonomic dysfunction, it can be used alone or in conjunction with benzodiazepines: Intravenous loading dose of 5 gm (or 75 mg/kg), then 2–3 gm per hour before spasm control is achieved. Track patellar reflex to prevent overdosing, as areflexia (absence of patellar reflex) occurs at the therapeutic range's upper limit (4mmol/L). The

dosage should be minimized if areflexia develops. Dantrolene and baclofen (1–2 mg/kg intravenous or by mouth every four hours), Other spasm-controlling medications include barbiturates (100–150 mg every 1–4 hours in adults; 6–10 mg/kg in children; by either method) and chlorpromazine (50–150 mg intramuscular injection every 4–8 hours in adults; 4–12 mg intramuscular injection every 4–8 hours in children) (Ganesh,et al.,2004).

Autonomic dysfunction control: Magnesium sulfate, or morphine, as mentioned previously. Note: -blockers like propranolol were once recommended, but they can cause hypotension and rapid death; today, only esmalol is recommended (Thwaites et al., 2006).

Airway / respiratory control: Respiratory depression may be caused by medications used to manage spasms and provide sedation. This is less of a concern if mechanical ventilation is available; if not, patients must be closely monitored and medication doses modified to provide optimum spasm and autonomic dysfunction control while preventing respiratory failure. Mechanical ventilation is recommended where necessary if spasm, like laryngeal spasm, is impeding sufficient airing. Endotracheal tubes can cause spasm and worsen airway compromise, so tracheostomy should be performed as soon as possible (Surveillance, 2010).

Adequate fluids and nutrition Tetanus spasms cause high metabolic demands and a catabolic condition, so extra nutrition should be given. Nutritional assistance will improve the chances of survival. Close supervision and nursing care were used to the introduction of immunization and artificial respiration (around the 1920s–30s), it was possible to enhance survival. Individuals' chances of complete recovery enhance significantly if they can be assisted through one to two weeks of spasm and other challenges, especially in non-elderly and previously healthy patients. (Surveillance, 2010).

Tetanus is treated acutely by washing wounds and eradicating Clostridium tetani with antibiotics, such as metronidazole 500 mg three times daily with intravenous or(penicillin) (100,000–200,000)IU/kg/day (Ganesh,et al., 2004; Campbell, et al., 2009). The procedure will last seven to ten days. The suggestion that penicillin should be avoided because it may inhibit the GABAA receptor, causing stiffness of the muscles, does not appear to be supported by evidence (Ganesh,et al., 2004). Tetanus antitoxin is administered once intra muscularly (doses of 500 IU and 3000 IU, or greater have been tried, although it's unclear whether higher doses are more effective. The antitoxin is given to render any remaining tetanus toxin inactive (Blake, et al., 1976).

Antitoxin is unlikely to infiltrate toxin that has been taken up by nerve terminals. Even after the clostridia have been eliminated and antitoxin has been treated, muscular symptoms can worsen because tetanus toxin continues to be transferred axonally and trans-synaptically and to cleave VAMP. Intrathecal antitoxin delivery, such as by lumbar puncture, has been proven to inactivate tetanus toxin during trans-synaptic transport; in a meta-analysis, intrathecal administration was found to be superior than intramuscular administration in terms of survival (Kabura, et al., 2006).

Wound management In partially immunized individuals, mild cases of tetanus have been observed. Tetanus can be contracted by minor cuts and abrasions that aren't known as 'tetanus-prone' wounds by people who have a weakened immune system or are immunocompromised (WHO, 2017). In those with inadequate tetanus immunity, The danger of tetanus will grow if you wait too long to get help for such wounds. Finkelstein, et al. 2017). Cases of tetanus seem to be underdiagnosed and unreported in large numbers (Lu X, et al., 2018).

In Australia, there was a difference between recorded tetanus morbidity and serological tetanus immunity, adults over the age of 65 were found to have insufficient tetanus immunity and therefore were at risk of tetanus. Debridement and wound cleaning are effective in preventing tetanus by eliminating the source of tetanus infection and limiting the amount of tetanus toxin produced(Lu X, et al., 2018).

Five doses of vaccine administered in childhood provide long-term protection, and there's no reason to expect that fully inoculated person will be entirely protected for decades. The most recent advice to include preventive tetanus booster shots for people presenting with a tetanus-prone wound if five years have transpired since the last dose for those offering with a tetanus prone lesion reaffirms this safety. The literature indicates that for completely immunized persons, the time period between prophylaxis doses may be increased to up to ten years, although several studies are cautious later there is no agreed upon. Antitoxin safety is determined by a serological test as a result, modifying the existing approach is not recommended at this time. The existing evidence does not support extending this time span to ten years by administering a sixth dose in infancy, as proposed by the WHO for long term immunity (Nowlan, 2019).

It is important to note that recovery from tetanus does not confer immunity. Therefore, patients with clinical tetanus will still require appropriate vaccination to provide protection against subsequent exposures(PHE, 2013). Most patients presenting with tetanus prone wounds are seen either by their general practitioner or at Accident and Emergency departments. A recent review of tetanus prophylaxis among staff in Accident and Emergency departments found variations in self-reported level of knowledge and practice; only a third of respondents who had local guidelines available said they were always followed (Savage, et al., 2007).

These gaps in knowledge and lack of adherence to current national guidance can lead to patients receiving inadequate care. Similar finding have been observed in the United States and Europe (CDC, 2011; Abbate, et al., 2008). Clear local commissioning pathways are essential to ensure the provision of timely post exposure prophylaxis for vaccine preventable infections such as tetanus. Whenever possible Accident and Emergency departments should provide a first dose of tetanus containing vaccine to patients with an incomplete or uncertain immunization history as patients referred back to general practice may not attend. Clear and effective guidance for the provision of tetanus prophylaxis is readily available (PHE, 2013).

Local and national public health practitioners provide a source of expert advice on appropriate prophylaxis, laboratory tests, and treatment of tetanus. Immunization history is required for the appropriate risk assessment of patients presenting with wounds. Many patients, especially among the elderly, may not be aware of their immunization status nor have it recorded adequately in their health records and are may therefore be incorrectly assumed to be fully vaccinated. In the UK, patients born before 1961 would not have been eligible for routine immunization, although some men would have been immunized during national service, and may have incomplete vaccination histories. Ensuring wounds are managed in accordance with national guidelines and appropriate immunization delivered to susceptible patients requires effective communication between the primary and secondary care. Tetanus is a statutory notifiable disease and the local health protection team must be informed of suspected cases(PHE, 2013).

Tetanus is a potentially fatal vaccine preventable infection caused by a neurotoxin which is produced by *C. tetani* (Duerden ; Brazier, 2009). Cases of clinical tetanus are becoming increasingly rare in the UK due to the success of the vaccination program and many practitioners are unlikely to have had first

hand experience of managing such patients. Tetanus prone wounds, including those classed as high risk, however, are a comparatively common presentation to Accident and Emergency departments. These two cases highlight risks associated with delays in recognition of tetanus prone wounds and the fatal consequences from untreated injuries in susceptible individuals (Lyons, et al., 2011).

In the UK, armed forces personnel have been immunized against tetanus since 1938 with tetanus vaccination incorporated into the childhood immunization schedule from 1961 , the current UK schedule comprises of five doses of tetanus-containing vaccine commencing with a primary course at two, three and four months of age, with booster doses offered pre-school (around three years four months) and during adolescence (between 13 and 18 years old) (PHE, 2013). Coverage of tetanus vaccination evaluated at two years of age has been at least 94% for the last 20 years; seroprevalence data from 2009 suggested that 83% of the population were protected against tetanus although 36% of individuals aged over 70 were found to be susceptible, with women having significantly lower antibody levels than men (Begg, et al ., 1989; Wagner, et al, 2012). Most cases of tetanus occurred in susceptible individuals who were either unimmunized or partially immunized and did not have protective levels of antibodies at the time of exposure to *C. tetani* (Rushdy,et al., 2003; Galbraith,et al, 1981). Adults born prior to 1961, who are more likely to have missed out on childhood vaccinations, are over-represented in this population (Wagner, et al, 2012; Grubeck-Loebenstein, 2010) Sporadic clusters of tetanus in the UK have also been reported among people who inject drugs (PWID) (Hahné,et al, 2006).

2.3. Tetanus Toxoid

2.3.1. Tetanus Toxoid an Overview

Tetanus toxoid, a distilled education of an inactivated tetanus toxin, is one of the most critical immunizing drugs recognised. Adsorbed (alum-brought on) instruction is desired due to the fact it is more immunogenic than fluid instruction. All citizens of the United States who do not have any contraindications should take toxoid tetanus. To ensure protection against both illnesses, tetanus toxoid should always be given in conjunction with either the diphtheria toxoid alone or the diphtheria toxoid plus pertussis immunization. A two-dose course, given 4 to 8 weeks apart, followed by a third dosage 6 to 12 months later, leads in protective antibodies in over 95% of patients and is recommended for all unimmunized older children and adult (DTP, 1991).

Following early life DTP/DTaP immunization on the a while of eleven to 12 years, booster doses of grownup formula tetanus and diphtheria toxoids (Td) are counseled each 10 years thereafter. the only-time dose of Tdap may be replaced with one of the indicated Td boosters. DT must be supplemented by means of DTaP for youngsters for newborns who have no longer been immunized within the first yr of life and for whom the pertussis vaccine is contraindicated. For unvaccinated kids of their 2nd yr of lifestyles for whom the pertussis vaccination is contraindicated, two doses of DT have to be given 4 to eight weeks apart, with a 3rd dose 6 to 365 days later (see 'Pertussis vaccination'). DTaP or DT is given to kids beneath the age of 7. five doses of DTaP are given at 2, four, 6, 15 to 18 months, and four to 6 years of age. Fever and nearby responses are not unusual facet effects. some folks who have gotten a couple of doses of tetanus toxoid have advanced arthus-like reactions. A tetanus toxoid has been hypothesized as an odd motive of brachial plexus neuropathy (Stratton KR, et al., 1994).

As a source of GBS, Tetanus toxoid has also been implicated (Baxter R, et al., 2013). It rarely does so if tetanus toxoid triggers GBS (CDCP, 1996). A group of German scientists under the leadership of Emil von Behring discovered the first vaccine passive immunology in 1890. (CDCP, 2011). "DTP (combined diphtheria, tetanus, and pertussis vaccine" turned into to start with used in 1948 and changed into used till 1991, when it turned into changed with a acellular model of the pertussis vaccination because of protection issues (Cherry, et al., 1988).

Researchers pursued a replacement vaccination after 1/2 of individuals who received the DTP immunization had injection web page redness, swelling, and pain (CDCP, 2011).

2.3.2. Mechanism of action

Active artificial immunity is called the type of vaccine against this illness. This form of immunity is produced when a disease that is dead or weak enters the body, triggering an immune response that involves antibody development. This is good for the body since this suggests that the immune system can identify the antigen and generate the antibodies quicker if the disease is presented into the body (Vaccines & Immunizations, 2011).

2.3.3. Preparation of Tetanus Toxoid

The production of tetanus toxin in high yield depends on Preparation of Tetanus Toxoideveral factors namely; presence of particular toxigenic factors in the culture medium, intrinsic toxigenic capacity of C. tetani strains, and mode of cultivation. Although the toxigenic factors are still identified, semi synthetic and synthetic media enable the production of tetanus toxin to varying degrees have been formulated. The most widely used classical media were described by (Mueller and Miller, 1954; Latham et al., 1962).

More recently, formulation of new synthetic medium described by (EL-Helw, 2007), produced high potent tetanus toxin and more economic than traditional media. As tetanus toxin induces death before an adaptive immunity could be generated, active immunization with tetanus vaccine is crucial for prevention of death. At present, protection is routinely induced through immunization with a tetanus toxin derivative, which was first described for more than 80 years ago. Tetanus toxin inactivated by formaldehyde (tetanus toxoid) is devoid of toxicity but is still highly immunogenic with a stabilized native conformation (Inic-Kanada et al., 2009).

Tetanus toxoid is very immunogenic and even soluble tetanus toxoid given in adequate dosage can be protective. It is common, that the toxoid is adsorbed to aluminum hydroxide or phosphate prior to immunization, since the presence of this adjuvant induces an increased immune response (Bizzini et al., 1984; Majgaard and Koch, 1988). Parenteral injection of toxoid prepared from highly antigenic exotoxins of C. tetani regularly evokes neutralizing antitoxin, which is highly protective against the risk of disease in animals. The tetanus toxoid is among the most effective prophylactic immunogens in general use today. Regular vaccination of all horses and ponies against tetanus is absolute essential; in addition vaccination is quick simple and highly effective and only practical mean of long-term protection (British Horse Society, 2004).

2.3.4. Medicinal uses of Tetanus toxoid

2.3.4.1. Pregnancy

In the United States, pregnant women should take a dose of Tdap vaccine after delivery during each pregnancy, preferably between weeks 27 and 36, to allow antibody transmission to the fetus, according to prenatal care guidelines

(CDC, 2013) (Pregnancy Guidelines, 2016). It is recommended that pregnant women who have never received a tetanus vaccine (i.e. Who have never received DTP, DTaP or DT as a child or Ted or TT as an adult) starting during pregnancy, receive a series of three Td immunizations to ensure protection against maternal and neonatal tetanus. In such circumstances, one dose of Tdap should be swapped for one dose of Td, ideally between 27 and 36 weeks of pregnancy, and the sequence finished with Td (CDC, 2013; Havers ,et al.,2020).

Tetanus, an avaccine preventable and lifestyles-threatening ailment, maintains to imperil pregnant ladies and their fetuses, especially in nations where tetanus toxoid (TT) vaccination insurance and use are low. Tetanus is a bacterial ailment produced with the aid of spores of Clostridium tetani, which can be discovered everywhere in the international (cook, et al., 2001). In places in which sanitation is inadequate, the sickness is commonplace (Sheffield, et al., 2004).

The world health corporation (WHO) and different companies were operating to take away maternal and neonatal tetanus since the Eighties. The MNTE via 2005 (Maternal and Neonatal Tetanus elimination by using 2005) program makes a huge contribution to this attempt. the arena health organisation, the United nations populace Fund (UNFPA), and the United countries global children's Emergency Fund (UNICEF) collaborated to create this effort, which focuses on enhancing get right of entry to to and use of immunization for ladies of reproductive age. Regarding the preservation of the judiciary in formerly high-risk locations (WHO, 2000).

Despite the fact that a large-scale public health approach has achieved significant progress in lowering maternal and neonatal tetanus mortality, nearly 39 nations have yet to achieve maternal and neonatal tetanus eradication status, which is defined as Each case has fewer than one case.

Every country has 1,000 live births per region (Vandelaer, et al., 2003; WHO, 2011).

At 2004, the disease is estimated to have killed 128,250 babies and 30,000 mothers, mostly in Africa and Asia (Zarukostas, 2008). These rates were lower than those seen in the 1980 when the disease killed more than 1/2 1,000,000 babies (Roper et al., 2007). Despite the fact that the burden of tetanus-associated maternal and neonatal morbidity and mortality stays high in developing nations, current research in developing international locations with widespread immunization packages, which include Austriahave found that newborns have a lower level of immunity to the disease (Prusa et al., 2011).

According to a 2005 MNTE assessment, Kenya is one of the nations wherein 11-50 percentage of counties are at excessive threat of maternal and neonatal tetanus (WHO, 2000). Further, according to WHO/UNICEF countrywide immunization coverage estimates from 2009, 11% of Kenya's 149 counties have less than 50% coverage of as a minimum 3 (TT3) immunizations, with handiest 63 counties having coverage extra than eighty% (WHO, 2012). in keeping with a 19-yr trend analysis of the value of admitting a newborn to a rural district clinic in Kenya, the highest mortality rate for little one tetanus is sixty seven percent (Mwaniki et al., 2010). The rudimentary nature of the following statistical description leaves out a proof of the specific elements that affect testosterone immunization get admission to and use. it is critical to take a look at the relative contributions of factors that influence get entry to to and use of wintry weather immunization with the intention to accomplish the desired purpose of immunization and to identify powerful interventions to enhance vaccination programs.

Tetanus is now rare in France and other industrialized countries, thanks to large, systematic immunization campaigns. However, specific mortality due to tetanus has remained around 0.4/million inhabitants since 1994 Several groups

within the population remain at risk of insufficient immunization coverage . The at-risk categories are the elderly, women, and immigrants, as reported in France , as well as in the United States . Moreover, the abolition of obligatory national military service in France and the increase of immigration are likely to decrease vaccination coverage over the next decades (Colombet et al., 2005).

Tetanus prevention in moms and babies can be accomplished by easy childbirth health practices and tetanus immunization for moms (Blencowe, et al., 2011). The World Health Organization recommends a total of five doses of the TT vaccine for women without a history of TT vaccination. The first two doses are given in the first trimester, each one month apart, and the third dose is given during the following pregnancy or within a year (WHO, 2011).

The comprehensive review found that immunizing women of reproductive age lower the risk of newborn tetanus (Demicheli et al., 2005). According to a meta-analysis, immunizing pregnant women with at least two doses (TT2) can reduce tetanus-related neonatal mortality by 94%. (Blencowe, et al., 2010). According to studies, low vaccination coverage in these nations is due to a lack of vaccine access and understanding (Perry et al., 1998). Lack of understanding regarding the time and site of rat miscarriage immunization, as well as misconceptions regarding vaccines as contraceptive drugs, are further reasons for low coverage (Hasnain & Sheikh, 2007).

TT use remains suboptimal in several locations where appropriate, access to TT is provided through statewide immunization and preventive programs (Basher, 2010). The factors identified as positively impacting Pest fly immunization using Bangladesh Demographic and Health Survey data include maternal younger age at birth, higher maternal education level, higher spouse education level, higher maternal earning status, urban residency, access to modern toilets, and high household assets and wealth index. In northern

Ethiopia, rural residents and maternal higher education have been identified as strong predictors of the usage of three or more TIT dosages (Kidan, 2004). In contrast to the findings of Bangladeshi studies, moms living in rural parts of northern Ethiopia have a higher chance of receiving TT vaccination than moms living in urban regions. these disparities get up because of the availability of robust small scale community establishments that act as powerful community mobilization equipment for preventive and health merchandising (Kidane, 2004).

Other elements inclusive of a lady's health decision-making, the quantity of instances she visits an antenatal care issuer, and the sort of group wherein she gets antenatal care offerings in the event of immunization are not well understoodIdentifying characteristics linked with TT immunization is crucial for the creation and execution of effective programs aiming at increasing awareness, access, and usage of TT. In Kenya, the Demographic and Health Survey (DHS) in 2003 and 2008-2009 revealed that whitefly vaccination was underutilized, with only 52 and 55 percent of pregnant women reported receiving two or more doses of toxin, respectively (KNBS, 2010). The current study explores the factors that influence postpartum women in Kenya receiving enough TT vaccination using the Kenya Demographic and Health Survey (KDHS) from 2008 to 2009.

A-Efficacy and Effectiveness of Tetanus Vaccine for pregnant women

The vaccine is given to pregnant women and women of childbearing age to protect them from tetanus and to prevent their babies from NT (Koenig MA, et al,. 1998; Stanfield JP,et al,. 1973). After two doses of tetanus immunization, more than 80% of recipients had protective antibody levels (1-3). Two doses provide protection for 1-3 years, while some research suggests that prolonged protection is possible. The tetanus immunization is not harmful to a pregnant woman (Stanfield JP, et al,. 1973; Black RE, et al., 1980).

B- Recommendations of WHO toward giving vaccine for pregnant women

1-All pregnant women receive tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine (Tdap) as early as 27-36 weeks of pregnancy, according to the American College of "Obstetricians and Gynecologists (ACOG)".

2- Pregnant women must be knowledgeable that receiving the Tdap vaccine for the duration of every pregnancy is each secure and vital on the way to make sure that each new child is given the exceptional feasible safety towards whooping cough while they may be born.

3- Obstetricians and gynecologists should stock up on Tdap vaccine and administer it in their offices.

4- If partners, family members, and carers of infants have never been vaccinated, they should be administered the Tdap vaccine. All members of the family should be vaccinated at least two weeks before coming into touch with the infant.

5- If the woman has by no means received a previous dose of Tdap as a youngster, person, or throughout a previous being pregnant, the Tdap vaccine should be given shortly after delivery if it was not given during pregnancy.

6- There are some occasions when the Tdap vaccine should be given outside of the (27-36) week pregnant. In cases of wound treatment, whooping cough epidemics, or other mitigating conditions, for example, the need to guard against infection outweighs the benefit of administering the vaccination during the first 27-36 weeks of pregnancy.

In June 2011, the American College of Obstetricians and Gynecologists (ACIP) suggested that pregnant women who had not previously received Tdap receive one (CDC, 2012). In the midst of continuous increases in pertussis

disease, particularly newborn mortality (CDC, 2012), the Immunization Practices Advisory Committee proceeded to examine this topic. The need to lower the high burden of disease in neonates, encouraging safety findings (Sukumaran L, et al., 2015; McMillan M,et al., 2017) on Tdap use in adults, and advanced immunology evidence indicating considerable attenuation of immunity following immunization were all factors evaluated (Healy CM,et al, 2013).

The American College of Obstetricians and Gynecologists (ACIP) amended their recommendation in 2013 that the dose of Tdap be given throughout every pregnancy period, regardless of previous Tdap vaccination history (CDC, 2012). Tdap vaccination is suggested between 27 and 36 weeks of pregnancy for Tdap mothers. Vaccination is suggested as early as feasible in the pregnancy window of 27-36 weeks to enhance antibody of the mothers response that lead to passive antibody transmission, for the infant. However, in the case of wound management, pertussis outbreaks, or other mitigating circumstancesTdap vaccine can be correctly administered at any time throughout pregnancy if the want to protect in opposition to infection outweighs the advantage of administering the vaccine at some stage in the 27-36-week pregnancy window. since 2013, more proof has emerged that administering Tdap in the course of the past due second or early 0.33 trimester of pregnancy (with as a minimum weeks of immunization time earlier than start) is particularly helpful in preventing neonatal whooping cough (CDC, 2012).

Infants with pertussis whose moms got Tdap for the duration of being pregnant had significantly decreased morbidity, including a decreased probability of hospitalization and ICU admission, despite the fact that maternal vaccination is not totally protective (Winter K, et al., 2017). The safety data continues to be positive, particularly in cases when women receive several

Tdap vaccines in a short period of time due to pregnancies with short intervals. Immunization against Tdap during the first 27–36 weeks of pregnancy enhances motherly antibody reaction and passive antibody transmission to the fetus, according to new research. As a result, it appears that providing the Tdap vaccine as soon as possible, between 27 and 36 weeks of pregnancy, is the optimal strategy. As a result, it appears that the best approach is to provide the Tdap vaccine as soon as feasible during the 27–36-week gestation period (Naidu MA, et al., 2016; Kent A et al., 2016). If the Tdap vaccine is linked to a test for gestational diabetes, this would be simple to implement. Tdap vaccination at the same time as Rho (D) immune globulin delivery is another option for Rh-negative women to consider.

2.3.4.2. Infancy

The first vaccine is given to children when they are young. The DTaP vaccine, which contains three inactive toxins in one shot, is given to the infant. Diphtheria, pertussis, and tetanus are all avoided by DTaP. This vaccine is less risky than the DTP vaccine that was commonly used (CDC, 2015). The DT vaccine, which is a mixture of diphtheria and tetanus vaccines, is another choice for children. This is offered as an alternative to the DTaP vaccine for children who are allergic to it (CDC, 2011).

2.3.4.3. Children, older children, adolescents and adults

Because DTaP and DT are given to children under the age of a year, the preferred injection location is the anterolateral thigh muscle. These vaccines can, however, be injected into the deltoid muscle if necessary. The World Health Organization (WHO) recommends six doses for newborns starting at six weeks of age (WHO, 2017). In early childhood, four doses of DTaP should be given. The first dose should be given at the age of two months, the second at four months, the third at six months, and the fourth between the ages of

fifteen and eighteen months. For children aged four to six years old, a fifth dose is recommended, Td and Tdap are inserted into the deltoid muscle and are for older children, teens, and adults (CDC, 2011). Every ten years, these boosters should be taken. Shorter intervals between single Tdap doses and Td booster doses are safe (Talbot, Elizabeth, 2010).

2.3.4.4. Additional doses

Because lymphocytes synthesis (antibodies) does not occur at a constant high rate, booster shots are required. This is because after the vaccine is introduced, when lymphocyte production is high, white blood cell production activity starts to decrease. The decrease in T-helper cell function necessitates The use of a booster to maintain white blood cells active (Veronesi, 1981).

Td and Tdap are booster shots given to individuals aged nineteen to sixty-five years old every ten years to maintain immunity. Tdap (tetanus, diphtheria, and acellular pertussis) is a one-time, first-time only vaccine that protects against tetanus, diphtheria, and acellular pertussis. This should not be given to anyone under the age of eleven or over the age of sixty-five (CDC, 2015).

Td is a booster shot for people over the age of seven that contains the tetanus and diphtheria toxoids. Td, on the other hand, contains less diphtheria toxoid, hence the capitalization of the "d" and lowercase of the "T." (CDC, 2015). It's vital to remember injecting booster doses should be given before the age of 65, with one of the booster shots being Tdap and the rest being Td (Havers, et al., 2020).

2.3.4.5. Whole-of-life protection

A recent indication review to guide the brand newZealand nationality Immunization schedule indicated the need to reevaluate the immunization reputation and booster requirements for older persons (Petousis, 2016). In New

Zealand, the number of tetanus cases reported is exceedingly low, with less than one case reported on average every 12 months. The majority of cases recorded in recent days have all been among unvaccinated children or people over 65 years old who are either unvaccinated or confused about their immunization status. In the ten years between 1997 and 2016, 33 cases were reported, with 18 of the 21 with known immunization repute being vaccinated, demonstrating that modern immunization control procedures appear to be effective (ESR, 2017).

Milder tetanus cases in partially immune adults, on the other hand, are likely unreported or misdiagnosed (Collins, et al., 2016). Booster doses for tetanus-containing vaccine are currently recommended in New Zealand at ages 45 and 65. However, there is no certainty that both booster doses are required. Adults who're forty five years old, alternatively, won't have enough immunity to shield themselves till they may be sixty five years antique.

Many adults specially those over 60 years vintage, are at a higher hazard of tetanus due to declining immunity. Immunity can decrease more quickly following booster dosages if you don't get enough priming (Weinberg, et al., 2013). Even if they were fully vaccinated, many adults did not receive the same number of shots by the age of 18 that children do now. New Zealand's childhood vaccination program began in 1960 with four doses of tetanus-containing vaccine; the adolescent dose was no longer added till 1980 (MOH, 2006,2018). Furthermore, because more than a quarter of New Zealand's present population was born elsewhere, it's hard to establish how many primary doses were given to all adults (Stats NZ, 2013).

Despite the fact that the tetanus vaccine has been available for over 65 years, immunization insurance in New Zealand has traditionally been low, and with fewer vaccine doses available, it is feasible that a large share of recent

Zealand adults will lack immunity so that it will defend them until they are 65 years old if booster doses are not given.

The need for a regular adult booster dosage is projected to reduce as childhood immunization coverage increases and more persons reach 45 years of age, having received at least (five) childhood of tetanus vaccination doses (Nowlan, 2019). Extra dosages are still given to many adults for wound care and, more recently, for pregnant women. In New Zealand, vaccination coverage during period of pregnancy and at 45 years of age is currently insufficient to protect most adult from tetanus until they reach the age of 65. because of age-related decline in humoral immunity, a booster dose at 65 years might be required in New Zealand, even for a well-primed, absolutely immunized grownup populace who get vaccination throughout pregnancy and/or booster doses at forty five years. in line with mathematical modeling, tetanus safety in absolutely-primed people (antitoxin titre of as a minimum 0.01 IU/ml) might be maintained for over 70 years in ninety five percentage of the person populace in the US. However, it is uncertain whether this antibody titre is sufficient to protect people as well as harm (i.e. sufficient to neutralise tetanus toxin).

A decennial booster is commonly regarded as necessary. Regular decennial booster dosages are not expected in adulthood for people who were completely primed in infancy. Some countries prescribe one dose in early adulthood to improve pertussis immunity rather than tetanus immunity, however, this is more often than not to beautify pertussis immunity reasonably than tetanus immunity (since Tdap is preferred over Td) (WHO, 2017). There was no evidence that decennial booster doses increased the incidence of side effects, with injection site pain being the most common issue reported (Jackson et al. 2018). However, the majority of current data compared Tdap to

Td, evaluating the inclusion of the pertussis component rather than tetanus and diphtheria. (Kovac, et al., 2018).

2.3.5. Side effects

Redness, fever and swelling, as well as tenderness around the injection site, are typical tetanus vaccine side effects (one of five people have swelling). Following Tdap, people have complained of body aches and fatigue. In one out of every 500 people, Td / Tdap will enlarge the entire arm in a painful way (CDC, 2011; TdapVaccine Information Statement 2019). One out of every 100,000 to 200,000 doses of tetanus toxoid-containing vaccines (DTaP, DTP, Tdap, Td, DT) will cause brachial neuritis (Hamborsky J, et al,. 2015; ACIP, 1996).

2.3.5.1. Body system as a whole

Edema, Redness, warmth, and rash are examples of local adverse reactions. Following the injection, some patients can experience malaise, temporary fever, pain, nausea hypotension. Arthus-type hypersensitivity reactions, which are characterized by extreme local reactions that begin 2 to 8 hours after an injection, can occur, particularly in people who have had several booster injections (ACIP, 1987). Anaphylaxis have been identified in rare cases following the organization of tetanus. According to a research by the Institute of Medicine (IOM), there is a causal link between tetanus (tetanus toxoid) toxoid) and anaphylaxis (Institute of Medicine, 1994).

2.3.5.2. Nervous system

Following neurological conditions have been linked, to tetanus toxoid (tetanus toxoid) vaccines: neurological problems (SchlenskaGK,1977; RutledgeSL, et al,1986), including cochlear lesion (Wilson, 1967), brachial plexus neuropathies (Tsairis P, et al., 1972), radial nerve paralysis (Blumstein

GI, et al., 1966), recurrent nerve paresis, (Wilson, 1967), "space paresis, Guillain-Barré syndrome, and electroencephalogram (EEG) disorders with Encephalopathy".

The Institute of Medicin (IOM) concluded that the evidence supported recognition of a causal association between tetanus toxoid (tetanus toxoid) and brachial neuritis and GBS after examining records of neurologic occurrences after tetanus toxoid (tetanus toxoid), DT, or Td immunization (Pollard,et al., 1978).

2.3.5.3. Reporting of adverse events

The National Childhood Vaccine Injury Act of 1986 created the National Vaccine Injury Compensation Program, which requires doctors and other healthcare provider who order vaccines to keep long-lasting vaccination records and to notify If any bad effects occur, contact the usa department of fitness and Human services (Food and Drug Administration, 1988; CDC, 1990).

activities consisting of anaphylaxis or anaphylactic shock inside 7 days, brachial neuritis within 28 days, any acute trouble or sequela (consisting of demise) of an contamination (file at the Committee on Infectious sicknesses, 2000), impairment, harm, or circumstance stated above, or any events that would cause in addition doses are all reportable incidents. Health-care providers should report vaccine-related adverse effects to the Vaccine "Adverse Event Reporting System" of the US (DHHS) (VAERS). VAERS have a toll-free number 1-800-822-7967 where you can get Forms and instructions for completing the form, as well as information regarding the reporting circumstances. (CDC, 1990; Food and Drug Administration, 1988).

2.3.5.4. Contraindications

Any hypersensitivity to the vaccination, especially the mercury component thimerosal, prevents it from being used again. The use of this or every other similar vaccination after a severe unfavorable impact temporally linked with a previous dosage, along with an anaphylactic reaction, is contraindicated. A preceding dose of Tetanus (tetanus toxoid) Toxoid that resulted in systemic allergic reaction or neurologic reactions is an absolute contraindication for in addition use (CDC, 1991; Report of the Infectious Diseases Committee, 2000).

Only passive immunization with TIG should be given if a contraindication to using tetanus toxoid (tetanus toxoid)-containing preparations occurs in a person who has not completed a primary immunizing course of tetanus toxoid (tetanus toxoid) treatment and a clean, small lesion is sustained (Human). During the course of any febrile condition or acute infection, elective immunization should be avoided. Immunization should not be postponed because of a minor upper respiratory infection or a moderate febrile illness (CDC, 1991).

During a poliomyelitis outbreak, elective immunization should be postponed (Wilson, 1967). It is not recommended to use this or any other similar immunization after a serious adverse reaction, including anaphylactic reaction, that was caused by a previous injection.

2.3.5.5. Vaccine storage and handling

Development of effective vaccines has reduced the incidence of many serious infectious diseases. However, the efficacy of vaccines can be compromised by faulty transport, storage, and handling (Casto & Brunell ,1991). In the 1970s and again in the early 1990s, improper vaccine storage and handling were cited as possible reasons for vaccine failure that resulted in measles outbreaks in Canada (Steinmetz, et al., 1983; ACE, 1987). Vaccines

vary in stability with temperature changes. (Casto & Brunell ,1991; Glantz-Miller & Loomis,1985; Sokhey, et al.,1988).

Tetanus and diphtheria toxoid should not be frozen (NACI, 1994), but are more stable at warmer temperatures than pertussis and injectable polio vaccines. Live virus vaccines, such as oral polio, can be frozen, but repeated freeze-thaw cycles should be avoided.' The sensitivity of various vaccines to higher storage temperatures has been reported (Yuan et al., 1995), and the adverse effects of elevated temperatures on vaccine potency are believed to be cumulative (Yuan et al., 1995). Not only are vaccines sensitive to temperature, but some, such as measles, mumps, and rubella, must always be protected from light.

All vaccines should be stored and handled under recommended conditions to ensure optimal potency when they are administered. The cold chain has been extensively studied in nonindustrialized countries because of concerns about limited refrigeration facilities, power shortages, and inadequate transportation systems (Subramanyam,1989). However, problems with the cold chain are not limited to these countries. A Montreal study reported that 60% of 20 immunization sites visited had refrigerator temperatures higher than the recommended range of 2°C to 80C. A Los Angeles study of 50 pediatric offices showed that only 16% of vaccine storage coordinators could cite appropriate temperatures for vaccines, and 11 of 50 offices had refrigerator temperatures above 80C (Bishai, et al., 1992).

A British study of 40 general practices and community child health clinics showed only 40% of health care workers were aware of appropriate storage conditions for vaccines and only 20% had refrigerator thermometers (Thakker & Woods,1992). The United States currently has the safest, most effective vaccines in its history. Federal regulations require that vaccines undergo years of testing before they can be licensed. Once in use, vaccines are monitored

continually for safety and efficacy. As an immunization provider, you also play a key role in helping to ensure the safety and efficacy of vaccines

. Storage

- Carefully select and use the proper vaccine storage units to store vaccines.
- Have a properly calibrated thermometer or temperature recording device inside each storage compartment.
- Evaluate your cold chain procedures to ensure that vaccine storage and handling guidelines are being followed.
- Inspect vaccines upon delivery and monitor refrigerator and freezer temperatures to assure maintenance of the cold chain.
- Rotate vaccine stock so the oldest vaccines are used first.
- If errors in vaccine storage and administration occur, take corrective action immediately to prevent them from happening again and notify public health authorities.

. Administration

- Never administer a vaccine later than the expiration date.
- Administer vaccines within the prescribed time periods following reconstitution.
- Wait to draw vaccines into syringes until immediately prior to administration.
- Never mix vaccines in the same syringe unless they are specifically approved for mixing by the Food and Drug Administration (FDA).
- Record vaccine and administration information, including lot numbers and injection sites, in the patient's record.

Vaccination ranks as the number one public health achievement of the 20th century (C.D.C.P., 2011). Vaccines prevent an estimated 2.5 million deaths worldwide each year (Plan, 2013), and are amongst the most cost-effective preventive measures against infectious diseases. According to the

World Health Organization (WHO), vaccines are currently available for over 26 infectious diseases, many of which are designated for childhood vaccination. While vaccination has traditionally been against infectious diseases, there is significant emerging interest and work in developing vaccines for non-communicable diseases and chronic conditions, which is beyond the scope of discussion in this paper. Until very recently, physicians and nurses were generally the only healthcare professionals permitted to administer vaccines to patients. These vaccines were administered in a range of settings (for example in clinics and primary health care centers, community health clinics, work places, schools, and in hospitals). Despite the effectiveness and availability of vaccines in many parts of the world, vaccination rates and service uptake remain suboptimal among both healthcare providers and the public (Dube,et al, 2015).

Chapter Three

Methodology

Chapter Three

Methodology

The methodologies employed in the current study are discussed in this chapter. These approaches include research design, administrative arrangements, study preparation, study sample, study tool, and data collection methods, as well as pilot study, data analysis, and study limits.

3.1. Design of the Study

A quasi-experimental approach design to identify primary health care provider knowledge regarding tetanus disease and tetanus toxoid vaccine. A test-retest methodology has been used to create an educational program. The research took place from February 12th 2020 through May 28th, 2021. Prior to the program's execution, the questionnaire was sent to the primary health care providers for a pretest. Following that, a pre-test was conducted, followed by a post-test four weeks later.

3.2. Administrative and Ethical Considerations

Prior to the collection of the study results, official permits were obtained from the relevant authorities as follows:

1. Approval from the Research Ethical Committee of the University of Babylon at the College of Nursing (Appendix A 1).
2. The Babylon Health Directorate (Training and Development Division) also obtained official permits to formally access the primary healthcare sectors in Hilla City(Appendix A 2,3)..
3. The permission is presented to Health Sectors in Hilla City. Which include Hilla First and Second Sector. (Appendix A 4).
4. Primary health care providers have been told that their inclusion in the research was voluntary. The investigator explained the intent and the advantages of the research. After they decided to participate in the study,

they were given an anonymous questionnaire to preserve absolute confidentiality for the participants.

3.3. Setting of the Study

The study was carried out in the Babylon province. The study's environment was carefully picked from primary health care centers linked with the First and Second Hilla Sectors to be used as the study's location, the study was carried out at Almuhandisin and Alkawther primary health care centers in AL-AL-Hilla City.

Primary healthcare is the first contact a person has with the health system when they have a health problem, primary healthcare refers to a broad range of health services provided by medical professionals in the community, general practitioner (GP) is a primary healthcare provider, and so are nurses, pharmacists and allied health providers like dentists,also primary healthcare is the provision of health services including diagnosis and treatment of a health condition, and support in managing long-term healthcare, including chronic conditions like diabetes.

3.4. Sample of the Study

There are two stages of sampling

3.5.1.Stage I Center selection

A Non probability (purposive sample) of (Almuhandisin) primary health care center affiliated to AL-Hilla First sector was selected for study group and (Alkawther) primary health care center affiliated to AL-Hilla Second sector was selected for control group. Also (Alasatitha) primary health care center affiliated to AL-Hilla First sector was selected for needs Assessment.

3.5.2.Stage II (Selection of health care provider from primary health center).

A purposive sample of 40 healthcare providers working in primary health centers in the Hilla city was chosen using a non-probability (convenience

sample) method. They were split into two equal groups of 20 healthcare providers, one of which was exposed to the education program (study group) and the other which was not (control group).

3.5. Selection of Study Sample

A total of (53) primary health care providers were working in primary health care centers during the time of the study period and met the study criteria and agree to participate. Eight primary health care providers for pilot study were excluded from the study sample. Five primary health care providers from the total sample have participated in the needs assessment also excluded from the study. The rest of primary health care providers were divided into two groups as (20) to the study group and (20) to the control group.

3.6. Steps of the study

3.6.1. Determine the need of primary health care providers to educational program for Enhancement their knowledge about tetanus and tetanus toxoid vaccines.

To determine the need for a tetanus and tetanus toxoid vaccine education program for primary health care providers, as well as how to recognize and assess knowledge using a questionnaire. This assessment was completed by five health care professionals. The objective of this assessment was to evaluate the knowledge of the primary health care provider's needs about tetanus and tetanus toxoid vaccine. To accomplish this phase of the study, the researcher used an open questionnaire format.

The content of the format was based on the review of related literature and subjective experiences of the knowledge questions. A test was applied on a sample consisting of (5) primary health care providers working in primary health care Center in Hilla city. As for an assessment of the primary health care providers needs a questionnaire. Each health care provider was given a time period between (15-20) minutes to answer the questions. The results of the assessment revealed that the majority (62%) of the primary health care providers

displayed knowledge deficit about What are the Tetanus disease , tetanus toxoid vaccine concept and doses given. Therefore the results reveal that primary health care providers need to complete an educational program on tetanus and tetanus toxoid vaccines.

3.6.2.Construction and Implementation of the Education Program

3.6.2.1.Construction of tetanus disease and tetanus vaccine program:

The education program design was based on the results of primary health care providers needs assessment; and information gained from reviewing the relative scientific literature, previous studies and through the researcher's experience. The content of the program evaluated by experts in different field (Appendix G). A revision was made on the contents of the program form based on these experts' recommendations and suggestions. They have agreed that the program was designed efficiently to improve primary health care providers' knowledge toward an educational program

There are four lectures in the curriculum. Each one has an overview that includes an introduction, content, objectives, lecture location, teaching technique, teaching demonstration, and time consumption. All of those lectures are collected in a handbook that is sent to the research group's healthcare professionals prior to the program's deployment (Appendix D)

3.6.2.2.Tetanus and Tetanus toxoid Vaccine Program

On the principal domains, the tetanus vaccine program is implemented during four sessions. Each session lasts about an hour and is held in the Almuhandisin primary health care center.

At 11 a.m. and 12 p.m., all of the lectures are given to the participants (Appendix C).

First session:

- Background about vaccines.
- Background about Tetanus disease.

Place of lecture: (Almuhandisin) primary health care center

Time of Lecture-From 11 a.m. and 12 p.m.

Second session:

- Type of Tetanus disease.

Place of lecture: (Almuhandisin) primary health care center

Time of Lecture-From 11 a.m. and 12 p.m.

Third session:

- Treatment of Tetanus disease.
- **Place of lecture**: (Almuhandisin) primary health care center
- **Time of Lecture**-From 11 a.m. and 12 p.m.

Fourth session:

- Tetanus vaccine.
- Ways of giving Tetanus vaccine.
- **Place of lecture**: (Almuhandisin) primary health care center
- **Time of Lecture**-From 11 a.m. and 12 p.m.

The means used in administering the educational program:

- Booklet of educational program.
- The style of lecture and discussion
- The use of data projector

3.7. Group Assignment

3.7.1. Control Group:

Primary health care providers in the control group were exposed only to the usual activities of their units. This information also included brief instructions, which was provided by the physician.

3.7.2. Study Group:

The study group got the same information as the control group, as well as an educational program aimed at improving the participants' knowledge of tetanus toxoid vaccine.

3.8. Assessing the Effectiveness of the Education Program

The study used a post-test to analyze the changes in healthcare providers' attitudes on tetanus immunizations following the implementation of the Education Program.

3.9. Study Instrument

A detailed examination of relevant literature and prior studies is used to create and create a questionnaire format and an education program. The supervisor and specialists studied and analyzed the document. The questionnaire is used to collect data and comprises the following questions:

Part I:This part contains a social demographic characteristics which consists of (8) items that include (age, gender, marital status, occupational status, educational attainment, years of service in primary health care center and having knowledge about tetanus.

Part II: This section contains six domains for evaluating primary health care providers' knowledge of tetanus and the Tetanus toxoid vaccination. The following is how it is presented:

Domain (1):This domain contains (8) items of general information regarding tetanus desease and tetanus toxoid vaccine knowledge held by health-care providers.

Domain (2):This domain contains (5) Tetanus Sign and Symptom entries.

Domain (3):This domain contains (9) entries. What is the best way to administer vaccinations.

Domain (4):This domain includes (4) items of methods of prevention.

Domain (5): This domain includes (4) items of Complications of tetanus**.**

Domain (6): This domain includes (6) items of the extent of the problem.

3.10. Rating and Scoring

The item rating was done using the semantic scale, which was scored as follows: (2) for correct responses, and (1) for incorrect responses.

3.11. Methods of Data Collection

The information was gathered using a developed questionnaire (Arabic version) with self-reporting. To clarify and explain the methodology of answers, the researcher interviewed the sample in Almuhandisin primary health care center. The construction of the software and data gathering took place between March 9th and May 28th, 2020.

Data collection is carried out through the following technique:

1. Initial assessment to find out the need for this program
2. Pre-test (for study and control groups)
3. Implementing the constructed educational program for (study group) are exposed to posttest.
4. Four weeks later primary health care providers are exposed to posttest.

3.12. Pilot Study

A non-probability (purposive sample) of eight healthcare providers working at the Alkefl primary health center in the city of AL - Hilla was chosen. This pilot study is being conducted to determine the validity and reliability of the study instrument, as well as to confirm its clarity and content adequacy, as well as to estimate the standard time required for data compilation for each personality during the self-report procedure and to identify potential difficulties. The study was conducted from the period of 4th March 2020 to 8th March 2020.

3.12.1.Validity of the Questionnaire:

The legitimacy of the content is assessed by a panel of (14) experts. Experts in the fields of nursing and medicine. There are eight faculty members from the University of Babylon's Faculty of Nursing,

The experts' responses demonstrate that all of the experts agree that the questionnaire's (51) items are clear and suitable for measuring the phenomenon under investigation. On a few issues, changes are made based on the advice of specialists (Appendix G).

3.12.2.Reliability of the Questionnaire:

Data was collected from eight health care clinicians who work in primary health care clinics. The reliability coefficient was utilized to determine the concordance between the items of the questionnaire utilizing reliability testing as a statistical analysis method. As evaluated by a Cronbach's alpha and displayed below, the scale exhibited an adequate level of internal consistency (LoBiondo and Haber, 2014):

Table3-1:Reliability of the Studied Questionnaire

No. of items	Alpha Cronbach	Acceptable Value	Assessment
Knowledge Items= (36)	0.81	0.70	Pass Accepted

The questionnaire is reliable. The time required for answering the questionnaire ranged from (15-20) minutes. The instrument items were clarify and understood the phenomenon of primary health care providers knowledge regarding tetanus disease and tetanus toxoid vaccines at primary health care centres in Hilla City on the same society at any time in the future.

3.13 .Methods of Statistics

The collected data of the study was analyzed using SPSS (Statistical Package of Social Sciences) version 20 and Microsoft Excel (2010):

3.13.1.Descriptive

A. Statistical tables "Frequencies and percent" which are:

$$\% = \frac{\boldsymbol{Frequency}}{\boldsymbol{Sample\ Size}}\ x100$$

B. Mean of scores"M.s.".

The following formula can be used to obtain the average score:

$$M.S = \frac{\sum \text{ri} = 1\text{Fi x Si}}{\sum \text{ri} = \ 1\text{Fi}}\ x100$$

For Knowledge Questionnaire

∑xi=sum of the "***1x Incorrect+2x Correct***" for items.

(1)(Mean<1.5)is considered ***Poor Knowledge***.

(2)(Mean ≥ 1.5)is considered ***Good Knowledge.***

C. The test of standard deviation "S.d..

$$\text{Standard deviation} = \sqrt{\frac{\sum(X - \bar{X})^2}{n-1}}$$

D. It employs the "Cronbach alpha" correlational coefficient in determining the research tool's internal consistency, which may be determined using the formula below:

$$\alpha = \frac{K}{K-1}\left[1 - \frac{\sum_{i=1}^{K}\sigma_{ii}}{\sum_{i=1}^{K}\sum_{j=1}^{K}\sigma_{ij}}\right]$$

The investigate covariance between the items I and j is K, where K is the item number of questions. It's important to note that the variance of item I is not the same as the standard deviation.

3.13.2.Inferential

One Way ANOVA test

To see if there is a variation in the number of nominal standards of dichotomous random variables such as primary health care providers' expertise in different groups, as well as their demographic features.

Paired sample t-test

To comparison between test in one group such as (pre-post study group and pre-post control group test).

Independent t-test

To comparison between two independent samples such as (pre-test of study group and pre-test of control group).

For computing substantial levels relative to the level, the following shortcuts are used:

(1) **NS**:*Non significantly at probability-value>0.05*.

(2) **S**:*Significantly at probability-value<0.05*.

(3) **HS**:*Highly significantly at probability-value<0.01*.

Chapter Four

Results

Chapter Four

Results of the Study

Table 4-1: Socio-Demographic Characteristic of the Study Sample with Statistical Differences

Demographic Data	Groups	Study Group		Control Group		Sig Difference		
		Freq.	%	Freq.	%	T-Value	D.F.	P-Value
Age / Years	18-27 years	7	35.0	9	45.0	-0.309	38	0.759
	28-37 years	6	30.0	3	15.0			
	38-47 years	7	35.0	5	25.0			
	48 and older	0	0.0	3	15.0			
	Total	20	100.0	20	100.0			
Gender	Male	7	35.0	9	45.0	0.632	38	0.531
	Female	13	65.0	11	55.0			
	Total	20	100.0	20	100.0			
Marital Status	Single	6	30.0	7	35.0	0.330	38	0.744
	Marriage	14	70.0	13	65.0			
	Total	20	100.0	20	100.0			
Occupational status	Physician	0	0.0	3	15.0	0.399	38	0.692
	Nurse	9	45.0	8	40.0			
	Assistant physician	11	55.0	7	35.0			
	Pharmacist	0	0.0	1	5.0			
	Laboratory	0	0.0	1	5.0			
	Total	20	100.0	20	100.0			
Educational attainment	secondary school Nursing	8	40.0	8	40.0	-0.230	38	0.819
	Diploma	10	50.0	9	45.0			
	Bachelor	2	10.0	3	15.0			
	Total	20	100.0	20	100.0			
Year of Experience in primary health care center	1 to 10	8	40.0	10	50.0	-0.510	38	0.613
	11 to 20	11	55.0	6	30.0			
	21 to 30	1	5.0	4	20.0			
	Total	20	100.0	20	100.0			
Do you have knowledge about tetanus	Yes	16	80.0	16	80.0	0.000	38	1.000
	No	4	20.0	4	20.0			
	Total	20	100.0	20	100.0			

(Freq.): Frequency, (%): percentage, (P Value): probability value, (Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

This table represents the distribution of the primary health care providers their demographic characteristics in term of frequencies and percentage (control versus study). Age of the study participants ranged from 18-27 and 38-47 years as distributed in study group, while 35% of participants in the control group were aged 18-27 years old, there were somewhat less female primary health care providerss were dominate in both study-control groups, it constituted (65% & 55%) respectively. Concerning marital status, most of study sample were married in both groups (study-control) which composed (70% & 65%) respectively. Regarding occupational status, most of study participants in study groups work as doctor assistant and constituted (55%), while in control group they work as a health care providers and constituted (40%) out total number and graduated diploma. Year of experience in primary health care center in study group were 11 to 20 years and composed (55%), while fifty percent were 1 to 10 years experience in control group. Eighty percent in both groups (study-control) were having knowledge about the vaccine (tetanus).

Table 4-2: Primary Health care providers Responses of Study Group at Pre-Post Test Regarding to knowledge Educational Program

List	Items	Pre-Test			Post - Test			Sig Difference		
		M.s.	S.D	Ass.	M.s.	S.D	Ass.	T-Value	D.F.	P-Value
General information of Health care provider' knowledge										
1	Tetanus is considered as non-communicable disease	1.40	0.503	F	2.00	0.000	P	-5.339	19	0.000 S
2	Tetanus is (all answers)	1.20	0.410	F	1.80	0.410	P	-5.339	19	0.000 S
3	The disease is transmitted by(all answers)	1.15	0.366	F	1.75	0.444	P	-5.339	19	0.000 S
4	The cause of tetanus is bacteria	1.65	0.489	P	2.00	0.000	P	-3.199	19	0.005 S
5	The incubation period for tetanus is From 4 days to three weeks	1.10	0.308	F	1.80	0.410	P	-6.658	19	0.000 S
6	It is considered one of the types of tetanus, except D/selection B, C	1.25	0.444	F	1.90	0.308	P	-5.940	19	0.000 S
7	The tetanus vaccine is known as It is a debilitating vaccine	1.10	0.308	F	1.85	0.366	P	-7.550	19	0.000 S
8	The appropriate temperature for keeping tetanus vaccine is--2-8 Celsius	1.50	0.513	P	2.00	0.000	P	-4.359	19	0.000 S
Sign and symptom of Tetanus										
9	The most important symptoms of tetanus are Difficulty chewing, difficulty swallowing, and general stiffness in the body	1.35	0.489	F	1.75	0.444	P	-3.559	19	0.002 S
10	It is considered one of sign and symptoms of tetanus None of above	1.10	0.308	F	1.80	0.410	P	-6.658	19	0.000 S
11	The cause of seizures for a patient with tetanus is Exposure to loud sound	1.00	0.000	F	1.75	0.444	P	-7.550	19	0.000 S
12	The patient initially suffers headache	1.00	0.000	F	1.80	0.410	P	-8.718	19	0.000 S
13	Tetanus is an acute disease that called lock jaw because	1.30	0.470	F	1.45	0.510	P	-1.831	19	0.083 NS
How to deal with vaccine administration										
14	Tetanus Vaccine is listed in routine vaccinations in many countries	1.35	0.489	F	1.95	0.224	P	-5.339	19	0.000 S
15	Tetanus vaccine is given to a pregnant mother at27 and 36 Week	1.10	0.308	F	2.00	0.000	P	-13.077	19	0.000 S
16	The first dose of tetanus vaccine is given at the age of -: of the child	1.25	0.444	F	1.90	0.308	P	-5.940	19	0.000 S
17	The difference between a triple and a double tetanus vaccine is	1.05	0.224	F	1.70	0.470	P	-5.940	19	0.000 S
18	The most groups need of tetanus vaccine is	1.40	0.503	F	1.85	0.366	p	-3.943	19	0.001 S

19	The appropriate place to inject the vaccine for child is	1.40	0.503	F	1.95	.224	P	-4.819	19	0.000 S
20	Children are vaccinated with two additional boosting doses at school within	1.25	0.444	F	1.80	.410	P	-4.819	19	0.000 S
21	Expected side effects after administering tetanus vaccine	1.15	0.366	F	1.80	.410	P	-5.940	19	0.000 S
22	Which of the categories is more doses given(child)	1.35	0.489	F	2.00	0.000	P	-5.940	19	0.000 S
Ways of prevention										
23	One of the most important tips to avoid tetanus is You can easily avoid tetanus if you receive the vaccine	1.20	0.410	F	1.85	0.366	P	-5.940	19	0.000 S
24	What the person acquires after tetanus infection	1.30	0.470	F	2.00	0.000	P	-6.658	19	0.000 S
25	When a wound or acute object occurs, the injured person is given	1.65	0.489	F	2.00	0.000	P	-3.199	19	0.005 S
26	Among other things necessary to prevent tetanus infection	1.35	0.489	F	1.85	0.366	P	-4.359	19	0.000 S
Complications of tetanus										
27	All It is considered one of the important complications of tetanus	1.30	0.470	F	1.90	0.308	P	-5.339	19	0.000 S
28	One of the complications of tetanus is considered the most common death cause	1.20	0.410	F	2.00	0.000	P	-8.718	19	0.000 S
29	The Convulsion Cause fractures:	1.40	0.503	F	1.95	0.224	P	-4.819	19	0.000 S
30	Treatment of tetanus focuses on controlling complications the disease until its toxi effects disappear	1.25	0.444	F	1.55	0.510	P	-2.854	19	0.010 S
The extent of the problem										
31	The disease continues to afflict a health problem in the world	1.65	0.489	P	2.00	0.000	P	-3.199	19	0.005 S
32	Tetanus spreads when it is	1.10	0.308	F	1.85	0.366	P	-7.550	19	0.000 S
33	The World Health Organization estimates that neonatal tetanus has decreased	1.80	0.410	P	2.00	0.000	P	-2.179	19	0.042 S
34	Dies as a result of this disease 35-70% Those who develop it	1.10	0.308	F	1.60	0.503	P	-4.359	19	0.000 S
35	Government institutions are sufficient to control tetanus in the presence of:	1.15	0.366	F	1.90	0.308	P	-7.550	19	0.000 S
36	Social media has a role in raising awareness and controlling tetanus	1.45	0.510	F	2.00	0.000	P	-4.819	19	0.000 S

(M.s) mean of score 1.5 , (SD) stander deviation (P) pass, (F) fail , (Ns), Non-significant (S): significant, (T value): t-test, (D f): degree of freedom

Health care provider's questionnaire items towards knowledge regarding tetanus disease and tetanus toxoid vaccines, which classified in six axis (main domains), using MCQ questionnaire's items technique which were classify in to two categories responses, such as "False and True" along studied (Pre, and Post) periods due to application an educational program for study group, are chooses

for comparisons significant. Findings shows that there are significant difference between pre-post tests of study group in all Primary health care providers knowledge items except items number (5) in signs and symptom of tetanus show that there are no significant differences.

Table 4-3: Statistical distribution of the Study Group by their overall responses with Significant Difference between Pre-Test and Post-Test Scores

Overall assessment for study group	Pre-test				Post-test			
	Freq.	%	M.s.	S.d	Freq.	%	M.s.	S.d
Fail	20	100	1.2861	0.136	0	0	1.8625	0.065
Pass	0	0			20	100		
Total	20	100.0			20	100.0		
t-value= -21.267								
d.f. = 19								
p-value= 0.000 HS								

(M.s) mean of score 1.5 , (SD) stander deviation ,(Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

Results of testing significant with reference of questionnaire's items are reported mostly highly significant differences at *P-value <0.05*, which assigned effectiveness of the studied educational program through raising knowledge grades regarding Primary health care providers staff in study group, and that be enable to confirms importance or successfulness of applying the suggested program.

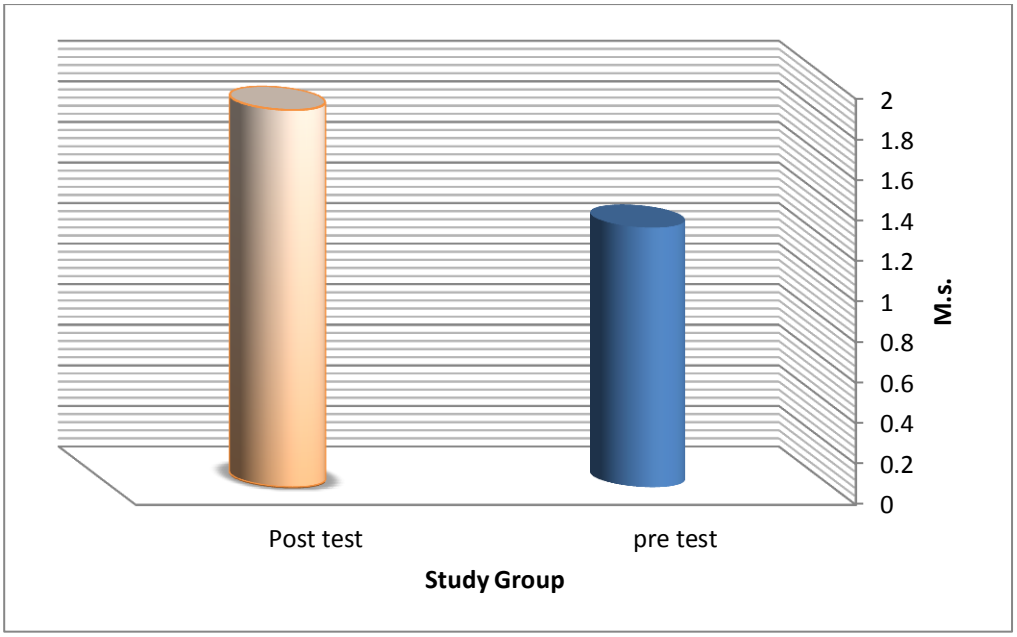


Figure 4-1: Difference between Pre-Test and Post-Test Scores Study Group

Table 4-4:Primary health care providers responses of Control Group at Pre-Post Test Regarding to knowledge Educational Program

List	Items	Pre-Test			Post - Test			Sig Difference		
		M.s.	S.D	Ass.	M.s.	S.D	Ass.	T-Value	D.F.	P-Value
General information of Health care provider' knowledge										
1	Tetanus is considered as non-communicable disease	1.45	0.510	F	1.25	0.444	F	1.453	19	0.163 NS
2	Tetanus is (all answers)	1.20	0.410	F	1.45	0.510	F	-2.517	19	0.021 S
3	The disease is transmitted by(all answers)	1.15	0.366	F	1.40	0.503	F	-2.517	19	0.021 S
4	The cause of tetanus is bacteria	1.30	0.470	F	1.25	0.444	F	.567	19	0.577 NS
5	The incubation period for tetanus is From 4 days to three weeks	1.10	0.308	F	1.30	0.470	F	-2.179	19	0.042 S
6	It is considered one of the types of tetanus, except D/selection B, C	1.20	0.410	F	1.35	0.489	F	-1.371	19	0.186 NS
7	The tetanus vaccine is known as It is a debilitating vaccine	1.20	0.410	F	1.05	0.224	F	1.831	19	0.083 NS
8	The appropriate temperature for keeping tetanus vaccine is--2-8 Celsius	1.30	0.470	F	1.15	0.366	F	1.371	19	0.186 NS
Sign and symptom of Tetanus										
9	The most important symptoms of tetanus are Difficulty chewing, difficulty swallowing, and general stiffness in the body	1.15	0.366	F	1.30	0.470	F	-1.831	19	0.083 NS
10	It is considered one of sign and symptoms of tetanus None of above	1.15	0.366	F	1.15	0.366	F	0.000	19	1.000 NS
11	The cause of seizures for a patient with tetanus is Exposure to loud	1.05	0.224	F	1.15	0.366	F	-1.453	19	0.163 NS

	sound									
12	The patient initially suffers headache	1.05	0.224	F	1.25	0.444	F	-2.179	19	0.042 S
13	Tetanus is an acute disease that called lock jaw because	1.20	0.410	F	1.40	0.503	F	-2.179	19	0.042 S
	How to deal with vaccine administration									
14	Tetanus Vaccine is listed in routine vaccinations in many countries	1.25	0.444	F	1.35	0.489	F	-1.453	19	0.163 NS
15	Tetanus vaccine is given to a pregnant mother at27 and 36 Week	1.15	0.366	F	1.25	0.444	F	-1.000	19	0.330 NS
16	The first dose of tetanus vaccine is given at the age of -: of the child	1.25	0.444	F	1.35	0.489	F	-1.453	19	0.163 NS
17	The difference between a triple and a double tetanus vaccine is	1.10	0.308	F	1.25	0.444	F	-1.831	19	0.083 NS
18	The most groups need of tetanus vaccine is	1.35	0.489	F	1.40	0.503	F	-.567	19	0.577 NS
19	The appropriate place to inject the vaccine for child is	1.20	0.410	F	1.35	0.489	F	-1.371	19	0.186 NS
20	Children are vaccinated with two additional boosting doses at school within	1.20	0.410	F	1.30	0.470	F	-1.000	19	0.330 NS
21	Expected side effects after administering tetanus vaccine	1.05	0.224	F	1.30	0.470	F	-2.517	19	0.021 S
22	Which of the categories is more doses given(child)	1.30	0.470	F	1.45	0.510	F	-1.831	19	0.083 NS
	Ways of prevention									
23	One of the most important tips to avoid tetanus is You can easily avoid tetanus if you receive the vaccine	1.20	0.410	F	1.40	0.503	F	-2.179	19	0.042 S
24	What the person acquires after tetanus infection	1.05	0.224	F	1.15	0.366	F	-1.453	19	0.163 NS
25	When a wound or acute object occurs, the injured person is given	1.30	0.470	F	1.40	0.503	F	-1.453	19	0.163 NS
26	Among other things necessary to prevent tetanus infection	1.35	0.489	F	1.35	0.489	F	0.000	19	1.000 NS
	Complications of tetanus									
27	All It is considered one of the important complications of tetanus	1.30	0.470	F	1.20	0.410	F	1.453	19	0.163 NS
28	One of the complications of tetanus is considered the most common death cause	1.30	0.470	F	1.15	0.366	F	1.831	19	0.083 NS
29	The Convulsion Cause fractures:	1.20	0.410	F	1.10	0.308	F	1.453	19	0.163 NS
30	Treatment of tetanus focuses on controlling complications the disease until its toxi effects disappear	1.40	0.503	F	1.25	0.444	F	1.831	19	0.083 NS
	The extent of the problem									
31	The disease continues to afflict a health problem in the world	1.25	0.444	F	1.20	0.410	F	0.567	19	0.577 NS
32	Tetanus spreads when it is	1.20	0.410	F	1.30	0.470	F	-1.000	19	0.330 NS
33	The World Health Organization estimates that neonatal tetanus has decreased	1.10	0.308	F	1.25	0.444	F	-1.831	19	0.083 NS
34	Dies as a result of this disease 35-70% Those who develop it	1.65	0.489	P	1.45	0.510	F	1.710	19	0.104 NS

35	Government institutions are sufficient to control tetanus in the presence of:	1.15	0.366	F	1.30	0.470	F	-1.831	19	0.083 NS
36	Social media has a role in raising awareness and controlling tetanus	1.15	0.366	F	1.35	0.489	F	-2.179	19	0.042 NS

(M.s) mean of score 1.5 , (SD) stander deviation (P) pass, (F) fail , (Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

Primary health care providers's questionnaire items towards knowledge regarding tetanus disease and tetanus toxoid vaccines, which classified in six axis (main domains), using MCQ questionnaire's items technique which were classify into two categories responses, such as "False and True" along control (Pre, and Post) periods due to not application an educational program for control group, are chooses for comparisons significant. Findings show that there are no significant difference between pre-post tests of control group in all primary health care providers knowledge items except, items number (2, 3, 5, 12, 13, 21, & 23) show that there are significant differences.

Table 4-5: Statistical distribution of the Control group by their overall responses with Significant Difference between Pre-Test and Post-Test Scores

Overall assessment for Control group	Pre-test				Post-test			
	Freq.	%	M.s.	S.d	Freq.	%	M.s.	S.d
Pass	0	0	1.2444	0.0621	0	0	1.2431	0.0708
Fail	20	100			20	100		
Total	20	100.0			20	100.0		
t-value= 0.203								
d.f.= 19								
p-value= 0 .841 NS								

(M.s) mean of score 1.5 , (SD) stander deviation ,(Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

Results of testing significant with reference of questionnaire's items are reported mostly no significant differences at *P-value >0.05*, which assigned need to educational program to raising knowledge grades regarding Primary health care providers staff in control group, and that be enable to confirms importance of applying the suggested program.

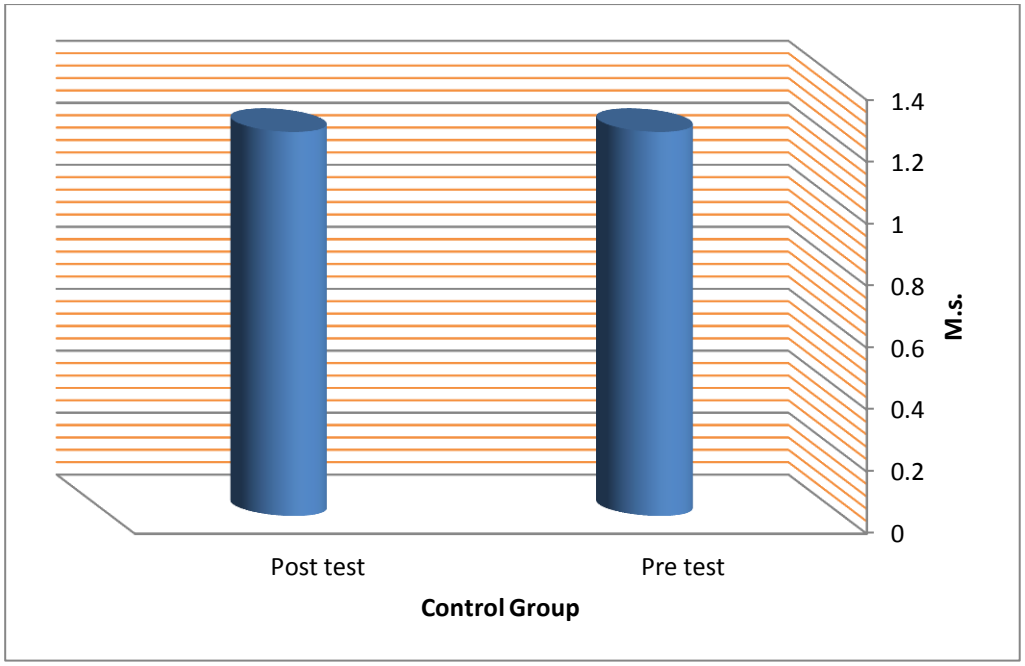


Figure 4-2: Difference between Pre-Test and Post-Test Scores Control Group

Table 4-6: Significant Difference between Study and Control Groups Regarding Pre-Test Scores

Pre-test	Study group				Control group			
	Freq.	%	M.s.	S.d	Freq.	%	M.s.	S.d
Fail	20	100	1.2861	0.136	20	100	1.2861	0.136
Pass	0	0			0	0		
Total	20	100.0			20	100.0		
t-value= 1.245								
d.f.= 38								
p-value= 0.221 NS								

(M.s) mean of score 1.5 , (SD) stander deviation ,(Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

Results of testing significant with reference of questionnaire's items are reported mostly no significant differences between study and control groups at *P-value >0.05*, which due to not conduct an educational program.

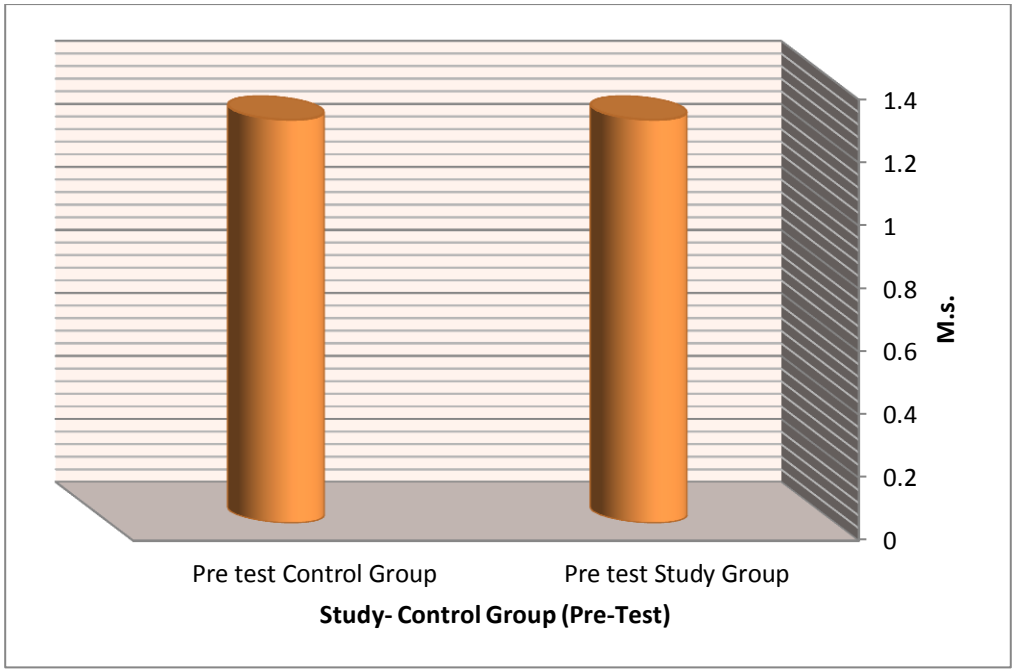


Figure 4-3: Difference between Pre-Test Study-Control Groups

Table 4-7: Significant Difference between Study and Control Groups Regarding Post-Test Scores

Post-test	Study group				Control group			
	Freq.	%	M.s.	S.d	Freq.	%	M.s.	S.d
Fail	0	0	1.8625	0.0652	20	100	1.2444	0.0621
Pass	20	100			0	0		
Total	20	100.0			20	100.0		
t-value= 28.745								
d.f.=38								
p-value= 0.000 HS								

(M.s) mean of score 1.5 , (SD) stander deviation ,(Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

Results of testing significant with reference of questionnaire's items are reported mostly highly significant differences at *P-value <0.01*, which assigned effectiveness of the studied educational program as unlike control group through raising knowledge grades regarding Primary health care providers staff in study group, and that be enable to confirms importance or successfulness of applying the suggested program.

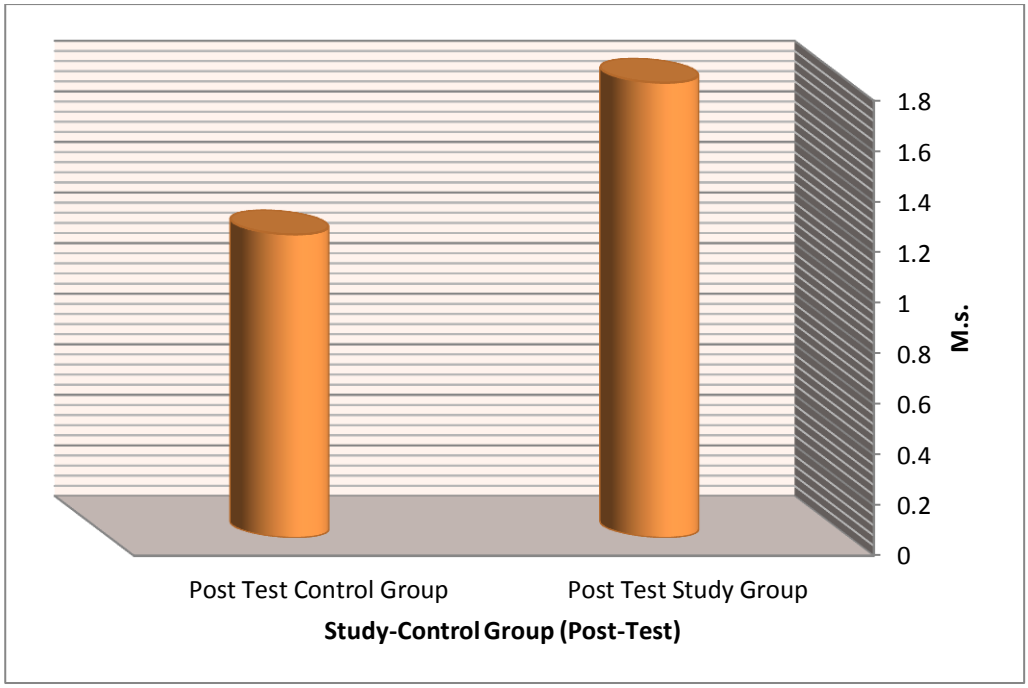


Figure 4-4: Difference between Post-Test Study-Control Groups

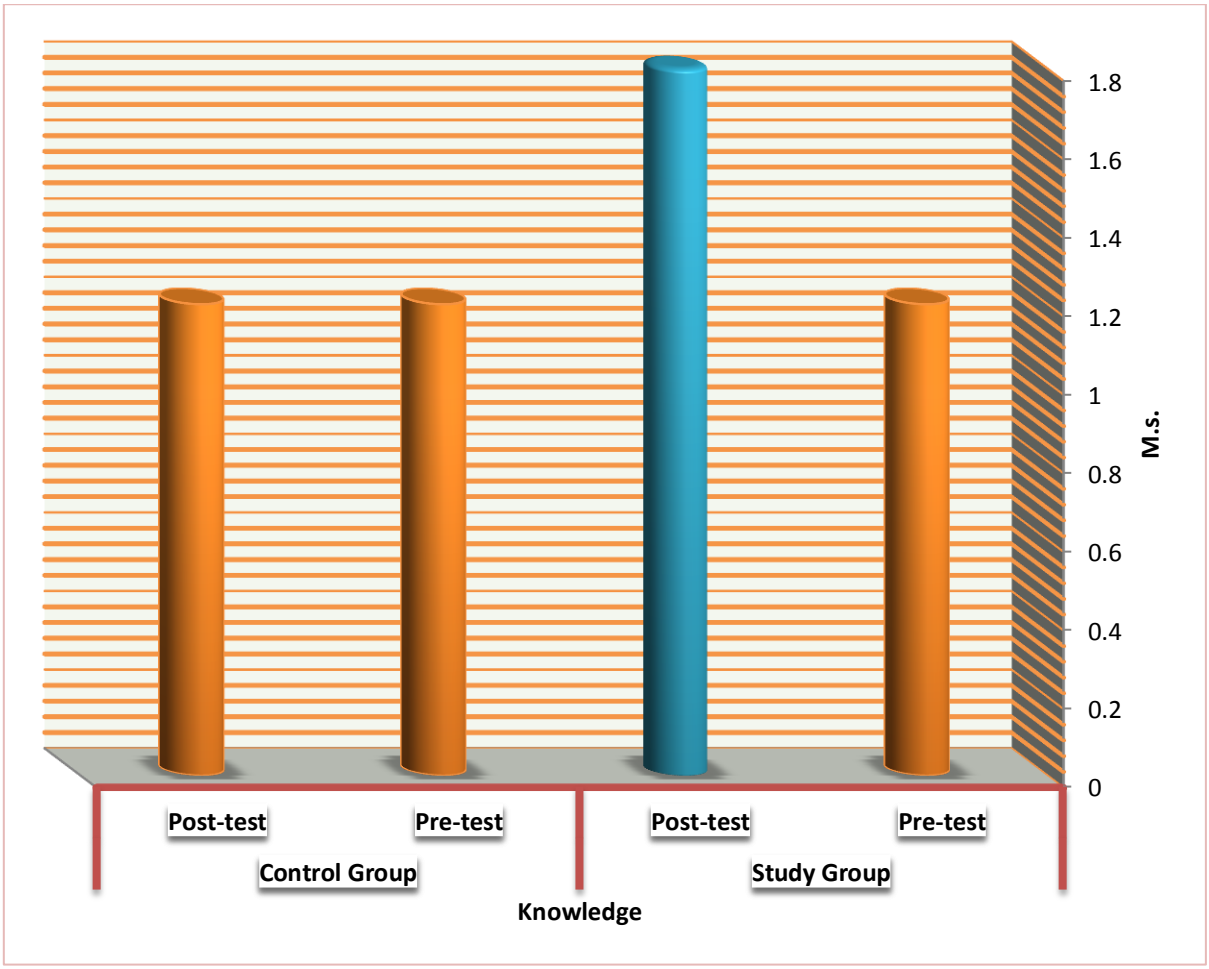


Figure 4-5: Difference between Study and Control Groups Regarding Pre-Post-Test Scores

Tabe 4-8: Mean differences (ANOVA) between the Overall Knowledge at Pre (Study Group) test and their Demographic Data

Demographic Data		d.f	Mean Square	F	Sig.
Age / Years	Between Groups	12	1.067	6.222	0.011 NS
	Within Groups	7	0.171		
	Total	19			
Gender	Between Groups	12	0.279	1.628	0.265 NS
	Within Groups	7	0.171		
	Total	19			
Marital Status	Between Groups	12	0.208	0.858	0.611
	Within Groups	7	0.243		
	Total	19			
Occupational status	Between Groups	12	0.271	1.115	0.461 NS
	Within Groups	7	0.243		
	Total	19			
Academic attainment	Between Groups	12	0.375	0.709	0.713 NS
	Within Groups	7	0.529		
	Total	19			
Year of Experience in primary health care	Between Groups	12	82.600	4.553	0.027 NS
	Within Groups	7	18.143		
	Total	19			
Do you have knowledge about tetanus	Between Groups	12	.167	0.972	0.540 NS
	Within Groups	7	.171		
	Total	19			

This table shows that there is no statistical significant between demographic data of study sample and their knowledge at (pre-test) educational program follow up *p-value >0.05*. The educational program when analyzed by ANOVA test.

Table 4-9: Mean differences (ANOVA) between the Overall Knowledge at Post (Study Group) test and their Demographic Data

Demographic Data		d.f	Mean Square	F	Sig.
Age / Years	Between Groups	7	.867	1.313	0.324 NS
	Within Groups	12	0.661		
	Total	19			
Gender	Between Groups	7	0.196	0.740	0.644 NS
	Within Groups	12	0.265		
	Total	19			
Marital Status	Between Groups	7	0.289	1.591	0.229 NS
	Within Groups	12	0.182		
	Total	19			
Occupational status	Between Groups	7	0.177	0.570	0.767 NS
	Within Groups	12	0.310		
	Total	19			
Academic attainment	Between Groups	7	0.610	1.864	0.164 NS
	Within Groups	12	0.327		
	Total	19			
Year of Experience in primary health care	Between Groups	7	64.636	1.165	0.389 NS
	Within Groups	12	55.479		
	Total	19			
Do you have knowledge about tetanus	Between Groups	7	0.192	1.240	0.354 NS
	Within Groups	12	0.155		
	Total	19			

This table shows that there is no statistical significant between demographic data of study sample and their knowledge at (post-test) educational program follow up *p-value >0.05*. The educational program when analyzed by ANOVA test.

Table 4-10: Mean differences (ANOVA) between the Overall Knowledge at Pre (Control Group) test and their Demographic Data

Demographic Data		d.f	Mean Square	F	Sig.
Age / Years	Between Groups	7	1.364	1.007	0.472 NS
	Within Groups	12	1.354		
	Total	19			
Gender	Between Groups	7	0.195	0.654	0.706 NS
	Within Groups	12	0.299		
	Total	19			
Marital Status	Between Groups	7	0.138	.462	0.844 NS
	Within Groups	12	0.299		
	Total	19			
Occupational status	Between Groups	7	1.338	1.676	0.206 NS
	Within Groups	12	0.799		
	Total	19			
Academic attainment	Between Groups	7	0.548	1.111	0.416 NS
	Within Groups	12	0.493		
	Total	19			
Year of Experience in primary health care	Between Groups	7	120.826	1.096	0.424 NS
	Within Groups	12	110.285		
	Total	19			
Do you have knowledge about tetanus	Between Groups	7	0.290	2.988	0.046 NS
	Within Groups	12	0.097		
	Total	19			

This table shows that there is no statistical significant between demographic data of control sample and their knowledge at (pre-test) educational program follow up *p-value >0.05*. The educational program when analyzed by ANOVA test.

Table 4-11: Mean differences (ANOVA) between the Overall Knowledge at Post (Control Group) test and their Demographic Data

Demographic Data		d.f	Mean Square	F	Sig.
Age / Years	Between Groups	8	1.367	1.011	0.479
	Within Groups	11	1.352		
	Total	19			
Gender	Between Groups	8	0.352	1.815	0.177
	Within Groups	11	0.194		
	Total	19			
Marital Status	Between Groups	8	0.210	.807	0.610
	Within Groups	11	0.261		
	Total	19			
Occupational status	Between Groups	8	1.473	2.261	0.105
	Within Groups	11	0.652		
	Total	19			
Academic attainment	Between Groups	8	0.660	1.626	0.223
	Within Groups	11	0.406		
	Total	19			
Year of Experience in primary health care	Between Groups	8	107.792	0.907	0.543
	Within Groups	11	118.806		
	Total	19			
Do you have knowledge about tetanus	Between Groups	8	0.275	3.025	0.046
	Within Groups	11	0.091		
	Total	19			

This table shows that there is no statistical significant between demographic data of control sample and their knowledge at (post-test) educational program follow up *p-value >0.05*. The educational program when analyzed by ANOVA test.

Chapter Five

Discussion

Chapter Five

Discussion of the Study Results

5.1. Introduction

Results of the educational program application regarding tetanus disease and tetanus toxoid vaccines for primary health care providers who work in primary health care centers in this chapter. The data were collected through the application of knowledge test, data have been analysis and interpreted according to the study objective. The educational program is designed to provide primary health care providers adequate and important knowledge about tetanus and tetanus toxoid vaccines.

5.2. Primary Health Care Providers Demographic Characteristics

The current study findings indicate that the age of the study participants ranged from 18-27 and 38-47 years as distributed in the study group, while 35% of participants in the control group were aged 18-27 years old, this can be explained that the primary health care staff need young staff especially immunization units to cover all duties. On the other hand, result declared that takes place because when the primary health care providers are young they will have a greater desire to develop their information than the primary health care providers who are included in higher age group (The researcher).

There were somewhat more female Primary health care providers were dominate in both groups, it constituted (65% & 55%) respectively. Because most of the reviewers for health care centers are women, so it requires female health staff, as is in results. Also, this may be due to the fact that males cover night duties (especially in hospitals) while females does not. This result has come with (Pratibha et al., 2005), confirmed that most participants were female gender.

Primary health care centers staff their marital status, most of study sample were married in both groups (study-control) which composed (70% & 65%) respectively. This result come because most of these age groups are the age of marriage, especially after their completion of the study and appointment in the field of health institutions. Where the Iraqi young after their graduating from the study and the presence of employment opportunity take the side of marriage.

Regarding study participants their occupational status, most of study participants in study groups were work as doctor assistant and constituted (55%), while in control group they work as a primary health care providers and constituted (40%) out total number and graduated diploma, as being the diploma degree were considered the major proportion of staff primary health care providers in health organization, due to the large number of institutions that graduate such degrees. Also, this result come because of the primary health care centers are totally depends on primary health care providers who graduated from nursing institute and nursing secondary school while primary health care providers who graduated from nursing college are allocated in hospitals units as well as they are still in small number compared to other staff. While, in study of in Kalasin confirmed that 90% of study participants were Bachelor degree as being the availability of health staff in the care centers (Widsanugorn, et al., 2011).

However, the year of experience in primary health care center in study group were 11 to 20 years and composed (55%), while fifty percent were 1 to 10 years experience in control group. In addition eighty percent in both group (study-control) were had knowledge about vaccine (tetanus). The few years of experience in control group could be explained by the fact that primary health care centers staff have a frequent rotating from one unit to another within the primary health care centers, and they must have the proper training to do the work.

Above findings consisting study conducted in Erbil City, in order to assess the primary primary health care providers their knowledge about vaccine at selected primary healthcare centers used questionnaire and self-report data collection. Findings reveals that most of the providers of health care in the category aged between (33 and 42) years (31%) and 51% of males and 80% were married and 56% have graduated from the institute, and half of them experienced in working between 2-11 years and (29 %) were working in the vaccination room. Fifty-four of primary health care providers and the average knowledge about rotavirus (Qadir, 2016).

5.3. Health Care Provides Knowledge

Findings of testing significant with reference of questionnaire's items are reported mostly high testing significant differences at *P-value <0.05*, which assigned effectiveness of the studied educational program through raising knowledge grades regarding nurse staff in study group, and that be enable to confirms importance or successfulness of applying the suggested program. While results of control group, findings reported mostly no significant differences at *P-value >0.05*, which assigned need to educational program to raising knowledge grades regarding nurse staff in control group, and that be enable to confirms the importance of applying the suggested program. The deficit knowledge pretest in both study and control groups regarding knowledge of tetanus toxoid vaccine might be due to several reasons; the primary health care providers do not develop and update their knowledge continuously, most of health staff who work in health institutions quit book reading so they do not follow up and only indulge in their practices, consequently they became unable to remember some information particularly the knowledge that related to vaccination.

The knowledge of tetanus immunization for adults was poor among all categories of primary health care providers, but only 75% of doctors and 51.1 % of nursing personnel correctly knew the immunization schedule against

tetanus in children. There is a need to upgrade the level of knowledge among primary health care providers so as to ensure that schedules of tetanus are followed properly and unnecessary repeated immunizations are avoided and the same knowledge is passed on to the general public also (Pratibha et al., 2005).

(Washburn, 2017) reported that It is important to note the importance of the primary health care providers' knowledge in the workplace which is confirmed study deals with nursing implications from the operating room to discharge: therapy following transurethral resection of bladder tumors. Its confirmed that oncology health care providers, who have a unique knowledge of safe handling and patient care, can improve staff safety and patient outcomes in several areas of healthcare organizations, as well as reduce the mortality and morbidity of urinary bladder cancer by learning more about the disease and therapy.

5.4. Difference between Study and Control Groups Regarding Pre-Test Scores

Results of testing significant with reference of questionnaire's items are reported mostly no significant differences between study and control groups at *P-value >0.05*, this can be related to not application of the program. This results come with a pilot survey deal with insufficient knowledge and inappropriate practices of emergency doctors towards tetanus prevention in trauma patients. Findings depicts there were no differences between two groups at pre-post test in p-value <0.05 (Liu,et al., 2020).

5.5. Knowledge at Pre (Study Group) test and their Demographic Data

Results indicate that there is no statistical significant between demographic data of study sample and their knowledge at (pre-test) educational program follow up *p-value >0.05*. This results come with study has been investigated the knowledge of general public and health

professionals about tetanus immunization. The results knowledge of tetanus immunization was poor among general public as well as primary health care providers. A substantial proportion of them indicated tetanus injection after every injury, which was unwarranted. The knowledge of tetanus immunization schedule for adults was poor among all categories of respondents. As well as the demographic characteristics of primary health care providers were insignificant with their knowledge. There is a need to upgrade the level of knowledge among primary health care providers so as to ensure that schedules of tetanus are followed properly and unnecessary repeated immunizations are avoided and the same knowledge is passed on to the general public also. (Pratibha et al., 2005).

5.6.Knowledge at Post (Study Group) test and their Demographic Data

The current study findings shows that there is no statistical significant between demographic data of study sample and their knowledge at (post-test) educational program follow up p-value >0.05. In this decade, study conducted in Delhi deals with tetanus toxoid knowledge among Doctors. Results indicated 38.3% of doctors favored tetanus toxoid injection after every injury. The correct knowledge of immunization against tetanus in children, pregnant women and adults was 75%, 90.8% and 35.8% respectively. The knowledge regarding when to give boosters was even poorer. Demographic has been not influence their knowledge of tetanus. The present study showed that doctors had poor knowledge about tetanus immunization that needs to be improved (Kumar et al., 2005).

5.7.Knowledge at Pre (Control Group) test and their Demographic Data

Findings show that there is no statistical significant between demographic data of control sample and their knowledge at (pre-test) educational program follow up p-value >0.05. With at the same decade, study

conducted in Nigeria, deals with factors associated with the tetanus. Findings depicts that demographic characteristics not associated with factors responsible for missed opportunity were poor history taking, lack of knowledge of the current schedule of immunization, dependence on physician referral for immunization and inefficient immunization record keeping system (Sule et al., 2014).

5.8. Knowledge at Post (Control Group) test and their Demographic Data

Findings that there was no statistical significant between demographic data of control sample and their knowledge at (post-test) educational program follow up *p-value >0.05*. The prevention of tetanus toxoid were not associated with primary health care providers demographic characteristics at p-value <0.05. This come along with preventive health practices among doctors in Delhi, Preventive health care practices among the doctors were low. There was an urgent need for them to follow good health care practices which they in turn can advocate to their patients (Anand et al., 2018).

Chapter Six

Conclusions and Recommendations

Chapter Six

Conclusion and Recommendations

6.1. Conclusion:

In light of the results and their discussion, this quantitative study used education program approach with questionnaire items towards enhancing primary health care providers knowledge regarding tetanus disease and tetanus toxoid vaccines which classified in six domain, The Questionnaire items technique which were classified in to two categories responses correct and incorrect and concludes that:

6.1.1. Knowledge in terms of tetanus disease and tetanus toxoid vaccines, primary health care providers were deficit knowledge on the pre test in both groups (study-control).

6.1.2. Primary health care providers were knowledgeable about the post test in study group.

6.1.3. In the study group, there were disparities in knowledge in both the pre and post tests. There were variances between Knowledge in both (study and control) groups at post test.

6.1.4. Pretest, there were no differences in the knowledge between the study and control groups.

6.1.5. At the post-test, there were variations in knowledge between the study and control groups.

6.1.6. After the post-test for the Study group for the Educational Program addressing tetanus disease and tetanus toxoid vaccines, there was an improvement in primary health care providers' knowledge.

6.1.7. Primary health care providers sociodemographic characteristics in primary health care and knowledge about tetanus have been no influences on their knowledge.

6.2. Recommendations:

Based on conclusion above:

6.2.1. Encourage health care practitioners to participate in teaching sessions to increase the knowledge of vaccines, particularly tetanus illness and tetanus toxoid.

6.2.2. After an education session, reassessment and follow-up for primary health care providers are required to monitor, evaluate, and promote their knowledge in order to ensure their application on the job.

6.2.3. Health directorate needs to be providing equipment and facilities in primary health care centers to implementation of professional practice.

6.2.4. Health directorate decision makers need to be a distribution of primary health care providers in appropriate numbers in the primary health care centers with expertise away from new appointments.

6.2.5. The decision makers should support the strength point in primary health care providers knowledge and practice to meet the patient's needs.

6.2.6. Special guidelines deals with vaccinations should apply on the barriers in differences locations that can be seen primary health care providers in the primary health care centers on basic rules of vaccinations.

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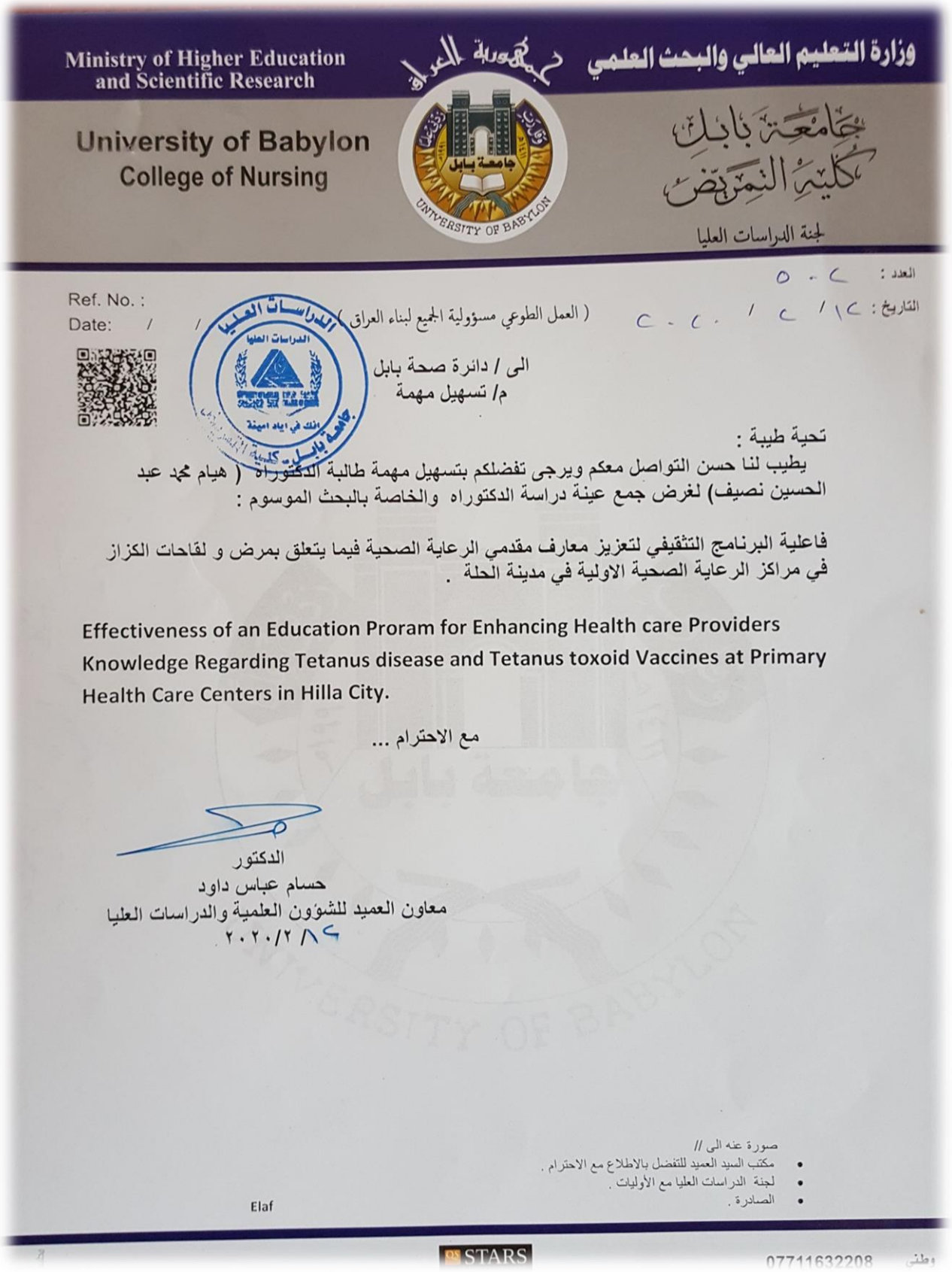
Appendices

Appendices (A)

Administrative Arrangements

Appendix (A)

Appendix A (1)



وزارة التعليم العالي والبحث العلمي
جمهورية العراق
Ministry of Higher Education and Scientific Research
جامعة بابل
كلية التمريض
University of Babylon
College of Nursing
لجنة الدراسات العليا

العدد : ٥٠٤
التاريخ : ١٧ / ٤ / ٢٠٢٠
Ref. No. :
Date: / /

(العمل الطوعي مسؤولية الجميع لبناء العراق)

الى / دائرة صحة بابل
م/ تسهيل مهمة

تحية طيبة :
يطيب لنا حسن التواصل معكم ويرجى تفضلكم بتسهيل مهمة طالبة الدكتوراه (هيام محمد عبد الحسين نصيف) لغرض جمع عينة دراسة الدكتوراه والخاصة بالبحث الموسوم :

فاعلية البرنامج التثقيفي لتعزيز معارف مقدمي الرعاية الصحية فيما يتعلق بمرض و لقاحات الكزاز في مراكز الرعاية الصحية الاولية في مدينة الحلة .

Effectiveness of an Education Proram for Enhancing Health care Providers Knowledge Regarding Tetanus disease and Tetanus toxoid Vaccines at Primary Health Care Centers in Hilla City.

مع الاحترام ...

الدكتور
حسام عباس داود
معاون العميد للشؤون العلمية والدراسات العليا
١٧ / ٤ / ٢٠٢٠

صورة عنه الى //
- مكتب السيد العميد للتفضل بالاطلاع مع الاحترام .
- لجنة الدراسات العليا مع الأوليات .
- الصادرة .

Elaf

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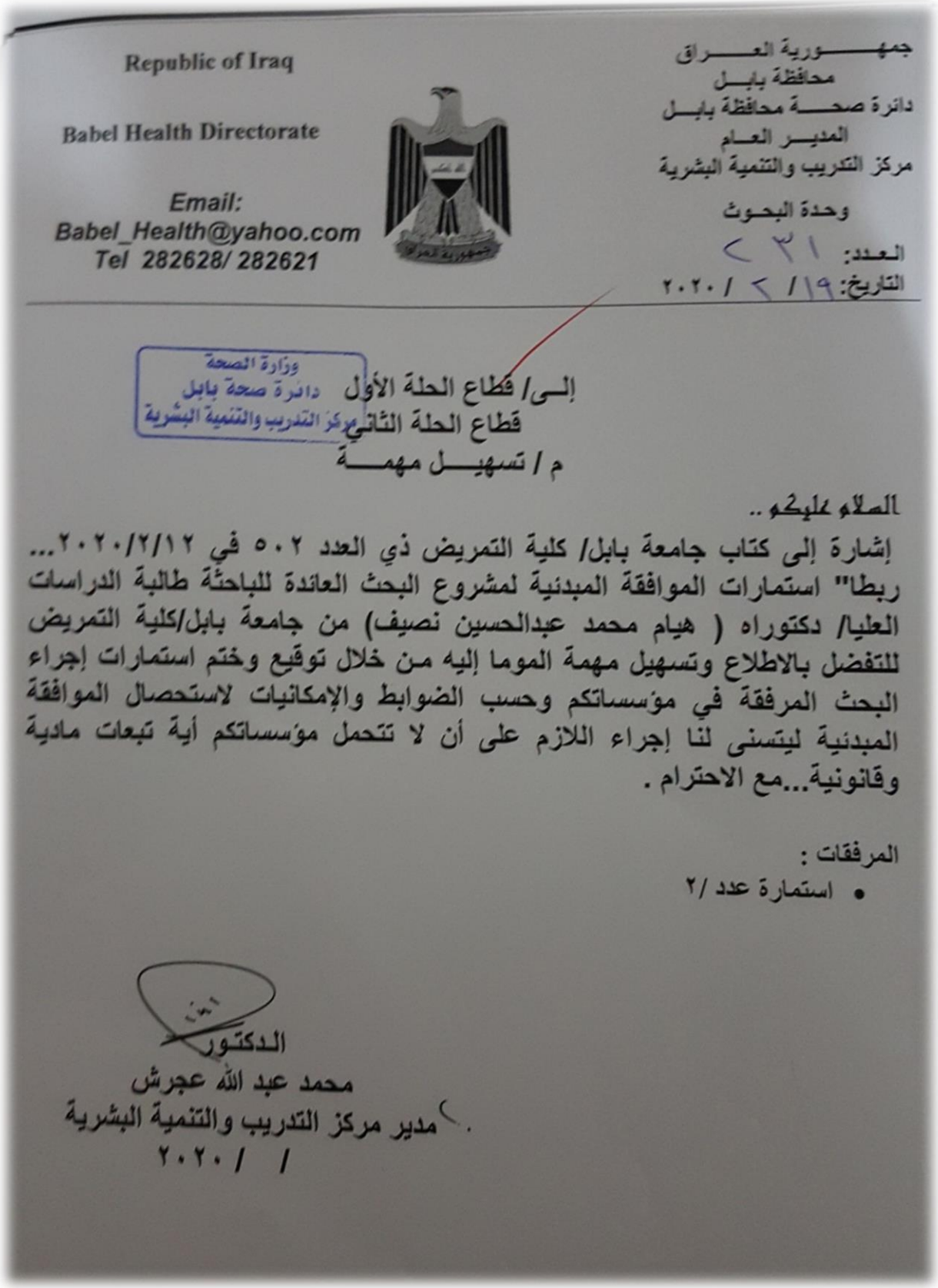
Appendix A (2)



جمهورية العراق
محافظة بابل
دائرة صحة محافظة بابل
المدير العام
مركز التدريب والتنمية البشرية
وحدة البحوث
العدد: ٢٣١٠
التاريخ: ١٩/ ٢/ ٢٠٢٠

Republic of Iraq
Babel Health Directorate
Email:
Babel_Health@yahoo.com
Tel 282628/ 282621

وزارة الصحة
دائرة صحة بابل
مركز التدريب والتنمية البشرية

إلى/ قطاع الحلة الأول
قطاع الحلة الثاني
م / تسهيل مهمة

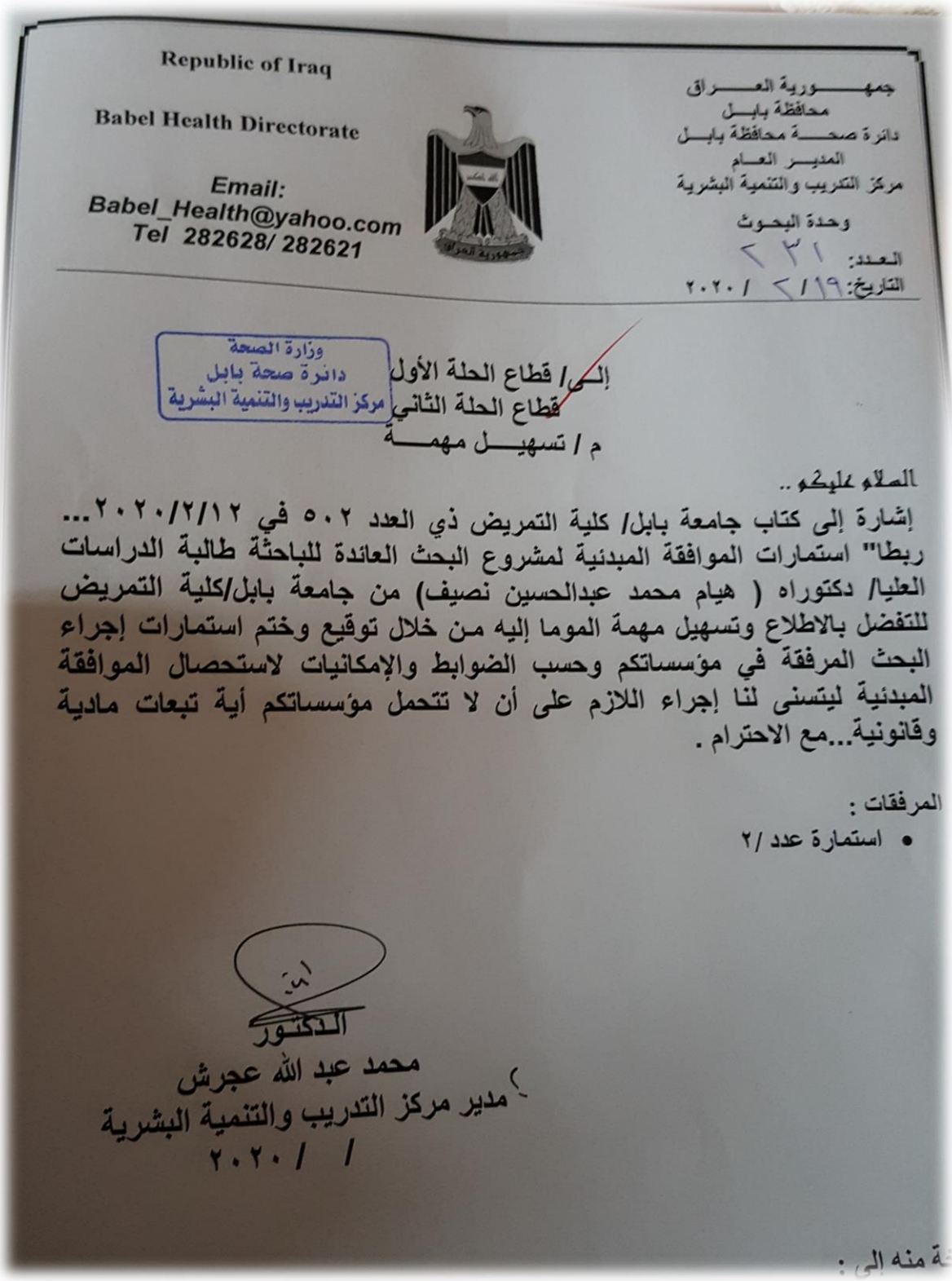
السلام عليكم ..

إشارة إلى كتاب جامعة بابل/ كلية التمريض ذي العدد ٥٠٢ في ٢٠٢٠/٢/١٢... ربطا" استمارات الموافقة المبدئية لمشروع البحث العائدة للباحثة طالبة الدراسات العليا/ دكتوراه (هيام محمد عبدالحسين نصيف) من جامعة بابل/كلية التمريض للتفضل بالاطلاع وتسهيل مهمة الموما إليه من خلال توقيع وختم استمارات إجراء البحث المرفقة في مؤسساتكم وحسب الضوابط والإمكانيات لاستحصال الموافقة المبدئية ليتسنى لنا إجراء اللازم على أن لا تتحمل مؤسساتكم أية تبعات مادية وقانونية...مع الاحترام .

المرفقات :
- استمارة عدد /٢

الدكتور
محمد عبد الله عجرش
مدير مركز التدريب والتنمية البشرية
/ / ٢٠٢٠

Appendix A (3)



Republic of Iraq

Babel Health Directorate

Email:
Babel_Health@yahoo.com
Tel 282628/ 282621

جمهورية العراق
محافظة بابل
دائرة صحة محافظة بابل
المدير العام
مركز التدريب والتنمية البشرية
وحدة البحوث
العدد: ٢٣١
التاريخ: ١٩/ ٢/ ٢٠٢٠

وزارة الصحة
دائرة صحة بابل
مركز التدريب والتنمية البشرية

إلى/ قطاع الحلة الأول
قطاع الحلة الثاني
م / تسهيل مهمة

السلام عليكم ..

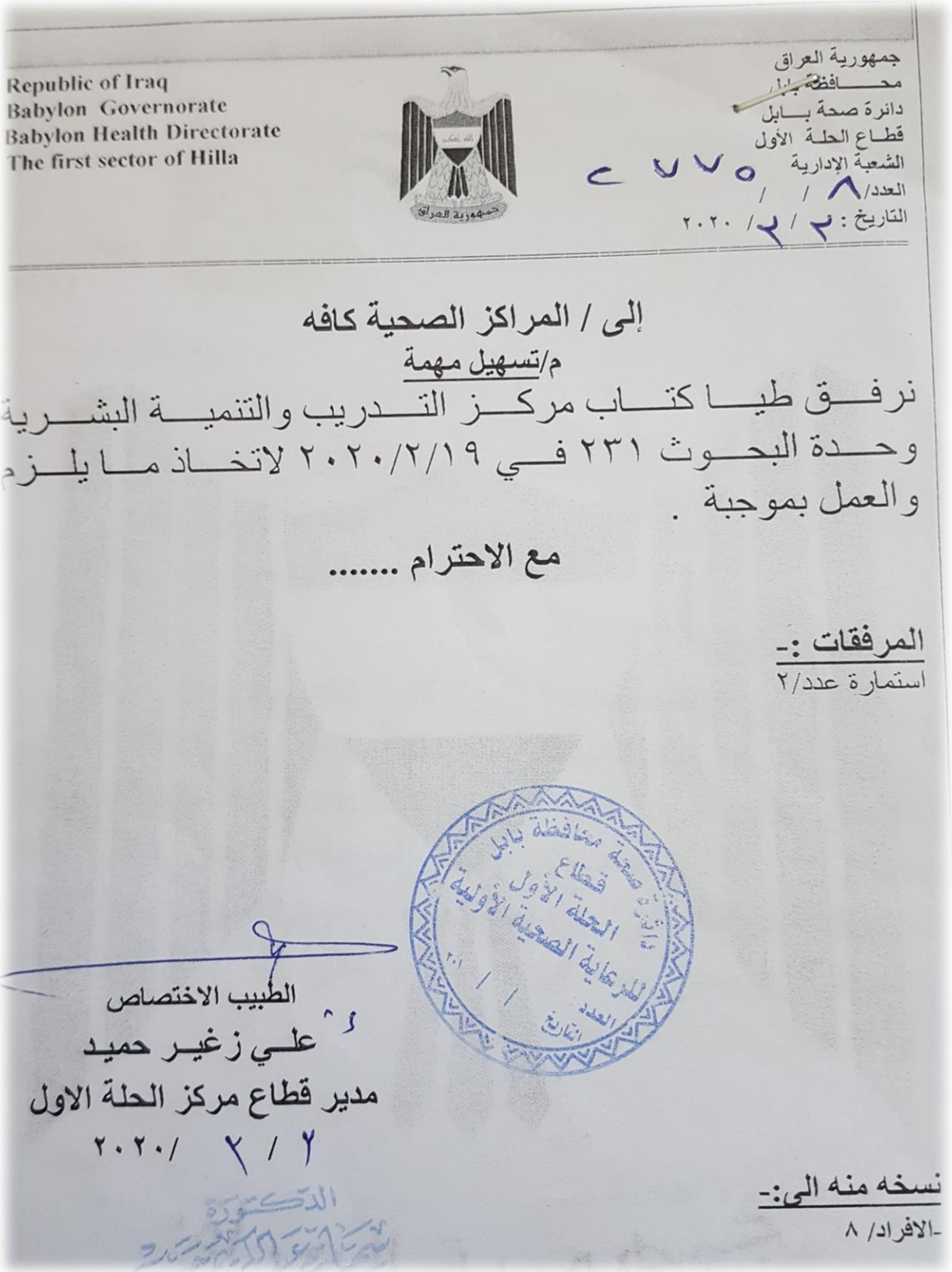
إشارة إلى كتاب جامعة بابل/ كلية التمريض ذي العدد ٥٠٢ في ٢٠٢٠/٢/١٢... ربطا" استمارات الموافقة المبدئية لمشروع البحث العائدة للباحثة طالبة الدراسات العليا/ دكتوراه (هيام محمد عبدالحسين نصيف) من جامعة بابل/كلية التمريض للتفضل بالاطلاع وتسهيل مهمة الموما إليه من خلال توقيع وختم استمارات إجراء البحث المرفقة في مؤسساتكم وحسب الضوابط والإمكانيات لاستحصال الموافقة المبدئية ليتسنى لنا إجراء اللازم على أن لا تتحمل مؤسساتكم أية تبعات مادية وقانونية...مع الاحترام .

المرفقات :
- استمارة عدد /٢

الدكتور
محمد عبد الله عجرش
مدير مركز التدريب والتنمية البشرية
/ /٢٠٢٠

ة منه الى :

Appendix A (4)



Republic of Iraq
Babylon Governorate
Babylon Health Directorate
The first sector of Hilla

جمهورية العراق
محافظة بابل
دائرة صحة بابل
قطاع الحلة الأول
الشعبة الإدارية
العدد/ ٨ / / ٢٧٧٥
التاريخ: ٢ / ٢ / ٢٠٢٠

إلى / المراكز الصحية كافه

م/تسهيل مهمة

نرفق طيا كتاب مركز التدريب والتنمية البشرية وحدة البحوث ٢٣١ في ٢٠٢٠/٢/١٩ لاتخاذ ما يلزم والعمل بموجبة .

مع الاحترام .....

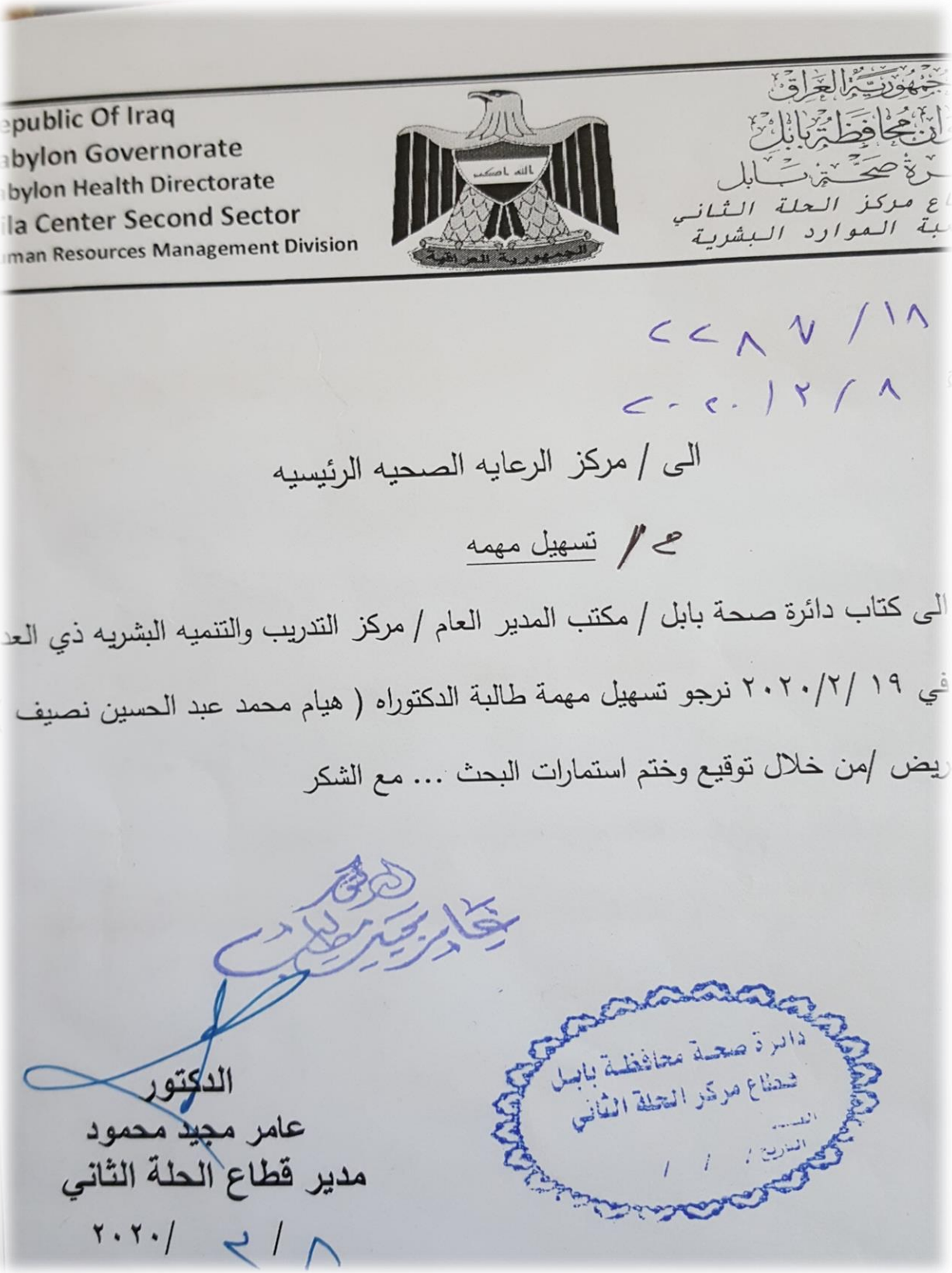
المرفقات :-
استمارة عدد/٢

دائرة صحة محافظة بابل
قطاع الحلة الأول
للرعاية الصحية الأولية
العدد / / ٢٠١
التاريخ

الطبيب الاختصاص
علي زغير حميد
مدير قطاع مركز الحلة الاول
٢٠٢٠/ ٢ / ٢

نسخه منه الى:-
-الافراد/ ٨

Appendix A (5)



epublic Of Iraq
abylon Governorate
abylon Health Directorate
la Center Second Sector
man Resources Management Division

جمهورية العراق
محافظة بابل
دائرة صحة بابل
قطاع مركز الحلة الثاني
شعبة الموارد البشرية

الله اكبر
الجمهورية العراقية

١٨ / ٧٧٨
٢٠٢٠/٢/٨

الى / مركز الرعايه الصحيه الرئيسيه

م/ تسهيل مهمه

الى كتاب دائرة صحة بابل / مكتب المدير العام / مركز التدريب والتنميه البشريه ذي العد

في ١٩ /٢/٢٠٢٠ نرجو تسهيل مهمة طالبة الدكتوراه (هيام محمد عبد الحسين نصيف

ريض /من خلال توقيع وختم استمارات البحث ... مع الشكر

الدكتور
عامر مجيد محمود
مدير قطاع الحلة الثاني
٢٠٢٠/ ٢ / ٨

دائرة صحة محافظة بابل
قطاع مركز الحلة الثاني

Appendices (B)

Initial Need Assessment of Health care providers

Appendix (B)

وزارة التعليم العالي والبحث العلمي

كلية التمريض / جامعة بابل

بسم الله الرحمن الرحيم

"استبانة تقييم معارف مقدمي الرعاية الصحية حول مرض ولقاح الكزاز"

عزيزي الموظف-------عزيزتي الموظفة--------

المعلومات والاجابات التي سوف تدون في هذه الاستمارة من خلالكم ستساعد في تقييم مستوى معارف الملاك الصحي المتعلق بمرض ولقاح مرض الكزاز في مراكز الرعاية الصحية الاولية في مدينة الحلة، وبناءا على اجاباتكم سيتم اعداد برنامج تثقيفي لتعزيز مستوى المعلومات حول مرض و لقاح مرض الكزاز.

يوجد في الاستمارة مجموعة من الفقرات يرجى قراءتها بعناية ويرجى وضع علامة صح امام الاختيار المقابل لكل فقرة من فقرات التي تراها مناسبا علما ان المعلومات ستكون سرية لغرض البحث العلمي فقط.

شكرا لتعاونكم معنا.....

عنوان الاطروحة

(فاعلية البرنامج التثقيفي لتعزيز معارف مقدمي الرعاية الصحية فيما يتعلق بمرض ولقاحات الكزاز في مراكز الرعاية الصحية الأولية في مدينة الحلة)

طالبة الدكتوراه

هيام محمد عبد الحسين

٢٠١٨-٢٠١٩

Appendix (B)

رقم المشارك( )

١- الجزء الاول/ المعلومات الديموغرافية:

١- اسم المركز الصحي:

٢- العمر سنة

٣- الجنس: ذكر انثى

٤- الحالة الزوجية: اعزب متزوج مطلق/ة ارمل

٥- الحالة المهنية:

طبيب ممرض معاون طبي م صيدلي م مختبر تقني اخرى

٦- التحصيل الدراسي:

- خريج اعدادية تمريض
- خريج دبلوم
- خريج بكلوريوس
- خريج دبلوم عالي
- ماجستير
- دكتوراه

٧- عدد سنوات الخدمة سنة

Appendix (B)

التقييم الأولي لمعارف المشاركين

ت	الأسئلة	الإجابة الصائبة		الإجابة الخاطئة	
		التكرار	النسبة %	التكرار	النسبة %
١	ماهي المناعة؟	٦	%٣٠	١٤	%٧٠
٢	ماهي طرق انتقال المرض؟	٦	%٣٠	١٤	%٧٠
٣	ماهي اعراض مرض الكزاز؟	٨	%٤٠	١٢	%٦٠
٤	ماهي فترة حضانة المرض؟	١٠	%٥٠	١٠	%٥٠
٥	ماهو سبب حدوث مرض الكزاز؟	٦	%٣٠	١٤	%٧٠
٦	ماهي عوامل الخطر للاصابة بمرض الكزاز؟	٦	%٣٠	١٤	%٧٠
٧	ماهي طرق الوقاية من المرض؟	٧	%٣٥	١٣	%٦٥
٨	هل تعتقد ان مرض الكزاز من الامراض المعدية؟	٩	%٤٥	١١	%٥٥
٩	ماهو لقاح مرض الكزاز؟	١٠	%٥٠	١٠	%٥٠
١٠	ماالفرق بين لقاح الكزاز الثلاثي والثنائي؟	٨	%٤٠	١٢	%٦٠
	النسبة الكلية	%٣٨		%٦٢	

Appendices (C)

Teaching plan

Appendix (C)

اليوم والتاريخ	اسم المحاضر	محتويات المحاضرة
الاثنين ٢٠٢٠/٣/٩	هيام محمد عبد الحسين	١- مفهوم مرض الكزاز ٢- طرق انتقال مرض الكزاز ٣- مسبب المرض
الاثنين ٢٠٢٠/٣/١٦	هيام محمد عبد الحسين	١- انواع مرض الكزاز ٢- فترة الحضانة ٣- الاعراض والعلامات ٤- عوامل الخطر ٥- المضاعفات
الاثنين ٢٠٢٠/٣/٢٣	هيام محمد عبد الحسين	١- علاج مرض الكزاز ٢- الوقاية من مرض الكزاز ٣- تعريف لقاح الكزاز ٤- الية عمل اللقاح ٥- جدول اعطاء اللقاح
الاثنين ٢٠٢٠/٣/٣٠	هيام محمد عبد الحسين	١- طريقة اعطاء اللقاح ٢- فاعلية لقاح الكزاز ٣- تفاعل لقاح الكزاز مع الادوية الاخرى ٤- الاثار الجانبية

Appendices (D)

Lectures of Education program

وزارة التعليم العالي والبحث العلمي

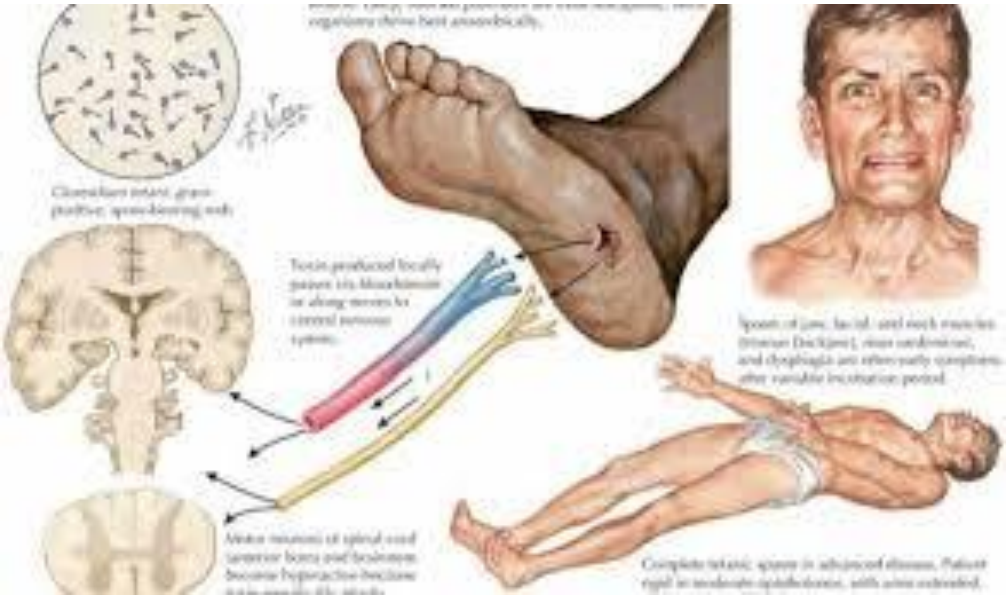
جامعة بابل

كلية التمريض

فرع تمريض صحة الاسرة والمجتمع

اسم البرنامج:

فاعلية البرنامج التثقيفي لتعزيز معارف مقدمي الرعاية الصحية فيما يتعلق بمرض ولقاحات الكزاز في مراكز الرعاية الصحية الأولية في مدينة الحلة



أعداد طالبة الدكتوراه

هيام محمد عبد الحسين

اشراف

أ.د. امين عجيل الياسري

أ.د. فخرية جبر محيبس

٢٠١٩-٢٠٢٠

Appendix (D)

المحاضرة الاولى

مقدمة عن مرض الكزاز

محتويات المحاضرة *content*

١- مفهوم مرض الكزاز

٢- طرق انتقال مرض الكزاز

٣- مسبب المرض

اهداف المحاضرة *Objectives*

بعد انتهاء المحاضرة يكون الممرض قادرا على ان:

١- يعرف مرض الكزاز ، المناعة

٢- يفهم طرق انتقال المرض

٣- يعرف مسبب المرض

مكان المحاضرة *The place*

مركز صحي المهندسين

الطريقة التعليمية *Method of Teaching*

١- المناقشة

٢- نظام عرض *PowerPoint*

الوسائل المستخدمة *Demonstration*

١- استخدام جهاز عرض البيانات

٢- اعتماد القاء المحاضرة والمناقشة

٣- استخدام كتيب البرنامج التثقيفي

الوقت المستغرق للمحاضرة *Lecture Time*

١- ساعة واحدة

١- المحاضرة الاولى:

مقـــدمة عامــة:

ماهو التطعيم او اللقاح

التطعيم: هي العملية التي يتم من خلالها إعطاء الشخص لقاحات خاصة (التطعيمات) ضد الكائنات الحية الدقيقة المسببة للأمراض لتحفيز جهاز المناعة في الجسم لتكوين الأجسام المضادة اللازمة لمقاومة الأمراض التي لم يصب بها من قبل ، حيث يقوم التحصين بحماية الشخص من الإصابة ببعض الأمراض المعدية ومضاعفاتها الخطيرة،

ويقوم التحصين بالسيطرة والقضاء على الأمراض المعدية التي تهدد الحياة، حيث ساهمت في تجنب ما بين ٢ الى ٣ ملايين حالة وفاة كل عام ، فضلاً عن تفادي عدد لا يحصى ً من حالات المرض والإعاقة سنويا .

اللقاحات هي واحدة من أعظم قصص النجاح في مجال الصحة العامة من خلال استخدام اللقاحات، وبفضل تطعيم لقاح الكزاز (التيتانوس)، تندر الإصابة بالتيتانوس في الولايات المتحدة وأجزاء أخرى من الدول المتقدمة. بيد أنه لا يزال يشكل خطرًا على حياة أولئك الذين ليس لديهم علم بتلك التطعيمات. لذا تشيع الإصابة به في الدول النامية.

مقدمة عن مرض الكزاز:

ماذا يعرف مرض الكزاز:

الكزاز هو مرض غير معدي تتم الإصابة به من خلال التعرض للجراثيم البكتيرية والمطثية الكزازية التي توجد في جميع أنحاء العالم في التربة وفي أجهزة الأمعاء الحيوانية، وعلى هذا النحو يمكن أن تتلوث العديد من الأسطح والمواد. ونتيجة للانتشار البكتيري الذي يُسبب الإصابة بمرض الكزاز، فلا يمكن القضاء على هذا المرض. ويؤدى تسمم الأعصاب الناتج تحت الظروف اللاهوائية في الجروح الملوثة بالجراثيم البكتيرية إلى الإصابة بمرض الكزاز.

ويمكن أن يتعرض الأشخاص من جميع الأعمار للإصابة بمرض الكزاز ولكن يعتبر هذا المرض بشكل خاص شائع وخطير في الأطفال حديثي الولادة وأمهاتهم، وعندما لا يتمتع الأمهات بالحماية الكافية من مرض التيتانوس، فمن الممكن أن يتعرضوا للاصابة بالكُزازِ.

Appendix (D)

وتقدر منظمة الصحة العالمية أن الكزاز الوليدي قد تسبب في وفاة حوالي ٤٩،٠٠٠ طفل حديث الولادة في عام ٢٠١٣، أي انخفض بنسبة ٩٤٪ عن الحالات المُسجلة في عام ١٩٨٨، حيث توفي ما يقرب ٧٨٧،٠٠٠ طفل حديثي الولادة بسبب مرض الكزاز في الشهر الأول من الحياة.

ومازال المرض يشكل مشكلة صحية عمومية مهمة في أنحاء كثيرة من العالم، ولاسيما في البلدان أو المناطق المنخفضة الدخل التي تكون فيها نسبة التغطية بالتمنيع (التلقيح)منخفضة وممارسات الولادة التي تفتقر إلى النظافة شائعة خصوصا في المناطق الريفية.

ولا يتحصل الأشخاص الذين يشفون من الكزاز على مناعة طبيعية ويمكن أن يُصابوا مرة أخرى، وبالتالي يتعين تطعيمهم. وتوصي منظمة الصحة العالمية بأن يتناول الأشخاص، ليتم حمايتهم في جميع مراحل الحياة، ٣ جرعات من لقاحات الخناق والسعال الديكي والكزاز وهم في مرحلة الطفولة، ثم يتبعها تناول مُعززات اللقاحات التي تحتوي على ذوفانُ الكُزازِ في سن دخول المدرسة (٤-٧ سنوات) أو في مرحلة المراهقة (١٢-١٥ سنة) وفي بداية مرحلة البلوغ أو أثناء الحمل الأول.

اذن نستنتج مماذكر:

١- الكزاز هو مرض حاد يسمى بالفك المغلق (lock jaw) ينتج عن تلوث الجروح بالجراثيم التي تحمل بداخل الأبواغ .

٢- الأبواغ تحمل بداخلها البكتيريا التي تبدأ بالنمو موضعيًا في الجرح نفسه، وتنتج سمًا قويًا يمتصه الجسم ويؤدي إلى تقلصات مؤلمة في العضلات وتقلص في عضلات الحنك وتشنجات متوترة.

٣- هذا المرض يأتي بصورة أوبئة .ولا ينتقل مباشرة من شخص لآخر.

٤- يموت من جراء هذا المرض ٣٥-٧٠% ممن يصابون به.

٥- جرثومة الكزاز تعيش في أمعاء الحيوان والإنسان.

٦- المصاب بالمرض لا يتطلب عزلة عن الآخرين، ولا يجري عليه أي حجر صحي.

٧- المؤسسات الحكومية لها دور اساسي بالسيطرة على مرض الكزاز وذلك بتوفير اللقاح اضافة الى العلاج.

٨- وسائل التواصل الاجتماعي لها دور مهم في التوعية والسيطرة على الكزاز.

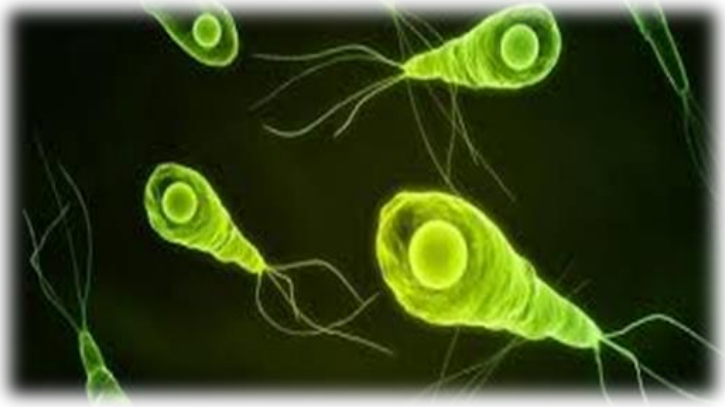
طرق انتقال مرض الكزاز:

١- ينتقل التيتانوس الوليدي عندما تُستخدم أدوات غير معقمة في قطع الحبل السري أو عندما تُستعمل مواد ملوثة في تغطية السرة. كما يمثل عدم نظافة أيدي الأشخاص الذين يجرون الولادة أو السطح الذي تُجرى عليه الولادة عاملاً آخر من عوامل الخطر.

٢- ينتقل الكزاز بسبب بكتريا الكزاز (كلستريديوم تيتاني) الموجودة في التربة والغبار، والبراز الحيواني. عندما تدخل الجراثيم جُرحًا عميقًا في اللحم، فإنها تنمو لتتحول إلى بكتيريا يمكنها إنتاج سموم قوية.

مسبب المرض:

يتسبب مرض التيتانوس عن بكتيريا تشكل أبواغ وتنتج مواد سامة وهي بكتيريا المطثية الكزازية (Clostridium Tetani). وهي بكتيريا لا هوائية تتواجد في التربة وفي لعاب الحيوانات، وتنتج ابواغا مقاومة للحرارة (في درجة الغليان) وللمواد المعقمة. تنتشر هذه الابواغ في الطبيعة، التربة، غبار البيت، امعاء الحيوانات وفضلاتها وكذلك في براز الانسان.



Appendix (D)

المحاضرة الثانية

محتويات المحاضرة *content*

١- انواع مرض الكزاز

٢- فترة الحضانة

٣- الاعراض والعلامات

٤- عوامل الخطر

٥- المضاعفات

اهداف المحاضرة *Objectives*

بعد انتهاء المحاضرة يكون الممرض قادرا على ان:

١- يعدد انواع مرض الكزاز

٢- يميز فترة حضانة المرض

٣- يميز بين اعراض وعلامات مرض الكزاز والامراض الاخرى

٤- يفهم عوامل الخطر

٥- يذكر مضاعفات مرض الكزاز

مكان المحاضرة *The place*

مركز صحي المهندسين

الطريقة التعليمية *Method of Teaching*

١- المناقشة

٢- نظام عرض *PowerPoint*

الوسائل المستخدمة *Demonstration*

Appendix (D)

١- استخدام جهاز عرض البيانات

٢- اعتماد القاء المحاضرة والمناقشة

٣- استخدام كتيب البرنامج التثقيفي

الوقت المستغرق للمحاضرة *Lecture Time*

١- ساعة واحدة

٢- المحاضرة الثانية:

انــواع مرض الكزاز

١- الكزاز الوليدي هو الكزاز الذي يحدث عند الأطفال حديثي الولادة هو شكل من أشكال الكزاز المعمم الذي يحدث في الأطفال حديثي الولادة ، ويحدث خلال ٢٨ يوم الأولى من العمر. وعادةً ما يولد لأمهات لم يتم تحصينهن. إذا تم تطعيم الأم ضد الكزاز ، فإن الرضع يكتسبون مناعة ضد المرض وبالتالي يتمتعون بالحماية. وعادة ما يحدث عندما يتم قطع الحبل السري بأداة غير معقمة.

تتم الولادات في المنزل دون القيام بإجراءات التعقيم الكافية وتتم في بيئة غير نظيفة.

٢- الكزاز الامومي: ويُسمى الكزاز الذي يحدث أثناء فترة الحمل أو في خلال الأسابيع الستة من نهاية الحمل "بالكزاز الأمومي"

فترة الحضــانة:

دور الحضانة يتراوح من أربعة أيام إلى ثلاثة أسابيع (والمعدل هو عشرة أيام)، وأكثر الحالات تحصل قبل اليوم الرابع عشر. لا يكتسب المرء مناعة دائمة بعد شفائه من المرض ويمكن أن يصاب به مرة ثانية. لذلك يجب تحصين الأشخاص بعد الشفاء من المرض. وبما أن هذا المرض يقع في كل الأعمار فمن الضروري الاحتفاظ بمناعة كافية ضده وتعميم التلقيح ضد الكزاز لكل الأعمار. وهذا التلقيح يؤمن الوقاية من المرض ١٠٠% تقريبًا،

الاعـراض والعــلامات:

١- يكون تأثير مرض الكزاز إما شامل لكل عضلات الجسم وهو الأكثر شيوعا ، أو محددا بمنطقة معينة من الجسم ، وفي الكزاز الشامل فان أهم أعراضه والتي تكون موجودة في أكثر من نصف الحالات ما يسمى الفك المغلق و قد يتأثر الصدر والرقبة والظهر وعضلات البطن، والأرداف .

٢- يعاني المريض 'في البداية من ألم في الرأس مع رعشة عامة في الجسم وعدم شعور بالراحة والحركة الكثيرة ،

٣- ومن ثم يعاني المريض من صعوبة في المضغ وصعوبة في البلع وتصلب عام في الجسم وكذلك تصلب في عضلات الرقبة.

٤- يحدث في الكزاز ما يسمى الابتسامة السردونية الاجبارية وهي عبارة عن ابتسامة يسببها تقلص عضلات الوجه عند مريض الكزاز ، وبعد ذلك تمتد التقلصات إلى عضلات الظهر ولبطن والحوض وكذلك عضلات الفخذ .

٥- كذلك فان مرض الكزاز يؤثر على الحنجرة والجهاز التنفسي ،وذلك يؤدي إلى إغلاق الجهاز التنفسي العلوي والى احتمال ما يسمى بالشردقة المزمنة حيث يدخل الطعام و إفرازات المعدة إلى الجهاز التنفسي و يؤدي ذلك إلى التهاب الجهاز التنفسي .

٦- ارتفاع درجة الحرارة وتعرق

٧- أما الأمور التي تحفز هذه التشنجات ، فان أي إزعاج أو ضوء ساطع أو صوت عال أو ملامسة تؤدي إلى تحفيز هذه التشنجات ، وتكون هذه التشنجات أسوأ ما تكون في الأسبوع الأول وتستقر في الأسبوع الثاني ، وتخف خلال الأسابيع الأربعة القادمة.

عوامـــل الخطر

تزيد العوامل التالية من فرص الإصابة بمرض الكزاز:

- عدم أخْذ اللقاح أو تحديث الجرعات المضادة للكزاز
- وقوع إصابة باختراق فيروس الكزاز الجرح
- دخول جسم غريب مثل الإبر أو الجبيرة

المضاعفـــــــــات

صعوبة وضيق بالتنفس ويصبح في بعض الأحوال مستحيلا. يبقى المرضى في كامل الوعي وهذا ما يجعل مرض التيتانوس مرضا فظيعا. لا يمكن النجاة من المرض إلا عن طريق التنفس الاصطناعي وتحت التخدير، أحيانا لمدة شهور كثيرة. في بعض الأحوال يتوفى المريض بسبب **المضاعفات** التي مثل:

- **عظام مكسورة.** قد تتسبب شدة الانقباضات والتشنجات في كسر العمود الفقري وعظام أخرى. كذلك قد تؤدي التشنجات الى الجروح في الفم والمنطقة التي حول الفم.
- **انسداد شريان في الرئة (الشريان الرئوي).** يمكن للجلطة الدموية التي انتقلت من مكان آخر بجسم المصاب أن تسد الشريان الرئيسي للرئة أو أحد فروعه.

Appendix (D)

- **التهاب وانسداد وريدي او جلطة دموية**

- **الفشل الكلوي الحاد**

- **الوفاة.** يمكن للتقلصات العضلية الناجمة عن الكزاز الشديد (الكزازية) أن تؤثر على التنفس أو توقفه. يُعد فشل الجهاز التنفسي السبب الأكثر شيوعًا للوفاة. قد ينجم أيضًا عن نقص الأكسجين توقف القلب والوفاة. يُعد الالتهاب الرئوي سببًا آخرًا من أسباب الوفاة.

Appendix (D)

المحاضرة الثالثة

محتويات المحاضرة *content*

١- علاج مرض الكزاز

٢- الوقاية من مرض الكزاز

٣- تعريف لقاح الكزاز

٤- الية عمل اللقاح

٥- جدول اعطاء اللقاح

اهداف المحاضرة *Objectives*

بعد انتهاء المحاضرة يكون الممرض قادرا على ان:

١- يعرف علاج مرض الكزاز

٢- يفهم الوقاية من مرض الكزاز

٣- يعرف لقاح مرض الكزاز

٤- يفهم الية عمل اللقاح

٥- يذكر جدول اعطاء اللقاح

مكان المحاضرة *The place*

مركز صحي المهندسين

الطريقة التعليمية *Method of Teaching*

١- المناقشة

٢- نظام عرض *PowerPoint*

الوسائل المستخدمة *Demonstration*

١- استخدام جهاز عرض البيانات

٢- اعتماد القاء المحاضرة والمناقشة

٣- استخدام كتيب البرنامج التثقيفي

الوقت المستغرق للمحاضرة *Lecture Time*

١- ساعة واحدة

٣- المحاضرة الثالثة:

العـــــلاج

لم يتوصل الطب إلى علاج مرض الكزاز حتى الآن، فالعلاج يركز على السيطرة على مضاعفات المرض إلى أن تزول آثاره السمية:

١-العناية بالجرح: فتعقيم الجرح وتنظيفه من الخلايا الميتة ومن المواد الملوّثة، يسهم في الحدّ من انتشار ونموّ أبواغ بكتيريا الكزاز.

٢-علاج المريض بجرعة كافية من مادة الغلوبلين المناعي (مضادات سم الكزاز (بالإنجليزية (TIG) (Antitoxins: لإزالة توكسين الكزاز الذي لم يرتبط بعد بالنهايات العصبية.. لا تساعد هذه المادة في مكافحة السم الذي قد دخل في جهاز العضلات والأعصاب، بل تساعد في مكافحة السم الذي ما زال يتم إنتاجه.

٣-المضادّات الحيويّة؛ فقد يقوم الطبيب بإعطاء المريض المصاب بالكزاز المضادات الحيوية سواء كان ذلك عن طريق الحقن أو عن طريق الفم.

٤-المهدّئات (بالإنجليزية(Sedatives :؛ حيث يقوم الطبيب بصرف أدوية مهدّئة للمريض، بهدف السيطرة على التشنّجات العضليّة التي يعاني منها.

Appendix (D)

الوقايـــــة من المرض

ليست للإنسان مناعة طبيعية من بكتيريا التيتانوس. كذلك الأشخاص الذين سبقت لهم الإصابة بمرض التيتانوس والشفاء منه يمكن لهم الإصابة بالمرض من جديد.

ولكن يمكن الوقاية من الإصابة بالكزاز وذلك بتلقي اللقاح.

بالاضافة الى التعيم او اللقاح فان العناية الجيدة بالجروح والاهتمام بالنظافة من الأمور المهمة للمساعدة في منع الإصابة بالكزاز

الأشخاص الذين يعانون من جروح ولم ياخذو اللقاح أو الذين لم ياخذو جرعة معززة لفترة طويلة يجب أن يحصلوا على الكزاز المناعي لـ Tetanus (TIG) ، الذي يوفر حماية مؤقتة ، بالإضافة إلى لقاح الكزاز. الأشخاص المصابون بالجروح المصابة ، والذين يعانون من مشاكل خطيرة في جهاز المناعة لديهم (بما في ذلك الأشخاص المصابين بعدوى فيروس العوز المناعي البشري) ، يجب عليهم أيضًا الحصول على TIG ، بغض النظر عن عدد لقاحات الكزاز التي تلقوها.

ماهو لقـــــاح الكزاز:

لقاح الكزاز أو ما يعرف أيضا السم المضعف الكزازي وهو لقاح خامل يقي من الإصابة بالكزاز . يعطى على شكل خمس جرعات خلال مرحلة الطفولة أما الجرعة السادسة منه فتعطى لاحقاً في مرحلة البلوغ ، وينصح بأخذ جرعات إضافية كل عشر سنوات . يتكون هذا اللقاح من ذيفان اجريت عليه عمليات تعقيم وتعديل (تخفيف)، ويكون ممتزا (ممتصا) على حامل معدني (من الالومينيوم) بغرض زيادة فاعليته التطعيمية.

يحصل معظم الأشخاص على مناعة أولية بعد تناول ثلاث جرعات من اللقاح ، ويتوجب على الأشخاص الذين لا يتذكرون متى تناولوا اللقاح آخر مرة أخذ جرعة من اللقاح خلال ٤٨ ساعة من الإصابة ، كذلك الأشخاص المعرضون للإصابات وليس لديهم مناعة كاملة ضد الكزاز ينصح بأخذهم للقاح ، كما يتوجب على الحامل التأكد من أوقات تناولها للقاح الكزاز وفي حال عدم تذكرها فإن إعطاءها للقاح سيحمي الطفل من الإصابة عند الولادة.

يوجد هذا اللقاح مع مجموعة أخرى من اللقاحات تدعى باللقاح الثلاثي و التي تحوي على لقاح الخناق و السعال الديكي والكزاز ومنها لقاح DtaP و Tdap ، كذلك اللقاح الثنائي الذي يحوي على

Appendix (D)

لقاحي الخناق والكزاز ومنها DT و Td يعطى اللقاح DtaP و DT للأطفال الذين تقل أعمارهم عن سبع سنوات، بينما يعطى لقاح Tdap و Td للذين تزيد أعمارهم عن سبع سنوات.

يحفظ اللقاح في درجة حرارة بين ٢ و٨ درجة سيليزية.

آلية العمل:

هذا النوع من التطعيم لهذا المرض يسمى بالمناعة الفاعلة المصنعة وهذا النوع من المناعة يحدث من الأجزاء الميتة أو المضعفة من المرض التي تدخل الجسم وتسبب تحفيزا للجهاز المناعي وإنتاجا للأجسام المضادة وبالتالي فإن الجهاز المناعي للجسم سيلاحظ دخول مولد الضد للمرض وسيقوم بإنتاج أجسام مضادة بسرعة أكبر .

جـــــدول إعطاء اللقاح

يَنْدرج لُقاح الكُزاز (تيتانوس (Tetanus Vaccine) (في قائمة التطعيمات الروتينية في كثيرٍ من الدُّول، يعطى اللقاح الثلاثي والثنائي للأطفال أقل من عمر سنة على شكل حقنة في الجانب الأمامي الجانبي لعضلة الفخذ ، ولكن يمكن إعطاؤه في عضلة الكتف عند الضرورة . وبحسب منظمة الصحة العالمية ، يعطى اللقاح ابتداء من الأسبوع السادس من عمر الطفل أي أن الجرعة الأولى

Appendix (D)

تعطى على عمر الشهرين تقريبا ، والجرعة الثانية في عمر الأربع شهور والثالثة بعمر الست شهور أما الجرعة الرابعة فتعطى بين الشهر الخامس عشر و الثامن عشر من عمر الطفل ، وينصح بإعطاء جرعة خامسة بين سن الأربع والست سنين .

اللقاح الثنائي والثلاثي الذي يعطى للأطفال الأكبر سناً والبالغين يعطى في عضلة الكتف ، ويتم تطعيم الأطفال بجرعتي تعزيز إضافيتين في إطار المدرسة في سن ٧ و ١٣ سنة، اللّقاح الذي يتلقاه الأطفال في سن ١٣ عاما هو لقاح مزدوج ويشتمل على مركبين من اللقاح: الأول مضاد للكُزاز والآخر مضاد للخُناق(Diphtheria) ، دون مُرَكَّب الشَّاهوق / السعال الديكي .(Pertussis) ثم يُنْصح بتلقي اللقاح ضد الكُزاز مرة كل عشر سنوات.

عند حدوث جرح أو إصابة مع الإشتباه بالإصابة بالتَّلوُّث، يُنْصح بتلقي جرعة مُعزِّزة إذا كانت قد مرت ٥ سنوات منذ تلقي جرعة التعزيز الأخيرة.

اما النساء الحوامل يجب أن يتلقين جرعة من لقاح الكزاز ويفضل أن يكون ذلك بين الأسبوعين ٢٧ و٣٦ من الحمل.

الاطفال والمراهقين		
الرقم	العمر	الجرعة
١	٢ شهر	DTP
٢	٤ شهر	DTP
٣	٦ شهر	DTP
٤	١ سنة	Booster Dose
٥	٤-٧ سنة	DT
٦	١٣ سنة	DT
٧	١٨ سنة	DT
المراة الحامل		
١	Td1	في الاسبوعين ال ٢٧ و٣٦ لا وقاية
٢	Td2	بعد اربع اسابيع وقاية ٣ سنوات
٣	Td3	بعد ستة شهر وقاية ٥ سنوات
٤	Td4	بعد سنة وقاية ١٠ سنوات
٥	Td5	بعد سنة وقاية مدى الحياة

Appendix (D)


جرعات توكسويد التتانوس
الجرعة الأولى
لا وقاية
فاصل
شهر
الجرعة الثانية
وقاية 3 سنوات
فاصل
6 أشهر
الجرعة الثالثة
وقاية 5 سنوات
فاصل
سنة
الجرعة الرابعة
وقاية 10 سنوات
فاصل سنة
الجرعة الخامسة
وقاية مدى الحياة

Appendix (D)

Appendix (D)

المحاضرة الرابعة

محتويات المحاضرة *content*

١- طريقة اعطاء اللقاح

٢- فاعلية لقاح الكزاز

٣- تفاعل لقاح الكزازمع الادوية الاخرى

٤- الاثار الجانبية

اهداف المحاضرة *Objectives*

بعد انتهاء المحاضرة يكون الممرض قادرا على ان:

١- يعرف طريقة اعطاء لقاح الكزاز

٢- يفهم فاعلية لقاح الكزاز

٣- يعدد الاثار الجانبية للقاح الكزاز

مكان المحاضرة *The place*

مركز صحي المهندسين

الطريقة التعليمية *Method of Teaching*

١- المناقشة

٢- نظام عرض *PowerPoint*

الوسائل المستخدمة *Demonstration*

١- استخدام جهاز عرض البيانات

٢- اعتماد القاء المحاضرة والمناقشة

٣- استخدام كتيب البرنامج التثقيفي

الوقت المستغرق للمحاضرة *Lecture Time*

١- ساعة واحدة

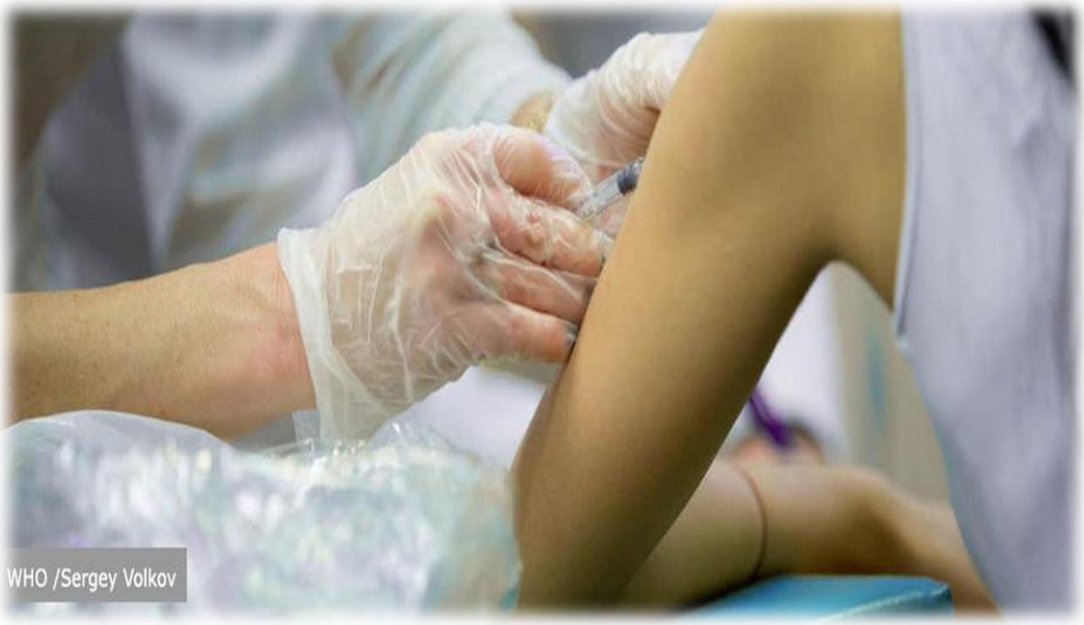
٤- المحاضرة الرابعة:

طريــقة اعطاء اللقاح

١- يتم حقن اللقاح بواسطة حقنة عضلية.(Intramuscular – IM)

٢- يتم حقنها في عضل الفخذ لدى الرُّضع والأطفال، بينما تُحقن في عضلة الذراع التي تعرف بالعضلة الدَّاليَّة (Deltoid Muscle) لدى البالغين.

٣- عند وجود مشكلة في تجلّط الدم ,قلة الصفيحات (Thrombocytopenia) أو مشكلة أخرى تتلعق بالنزف، يُنْصح بالحقن تحت الجلد (Subcutaneous-SC) خوفاً من حدوث النزف عند الحقن.



بداية الفعـــــالية:

يتم إنتاج الأجسام المضادة (الأضداد Antibodies) – في الجسم خلال أسبوعين، وبعد مرور شهر من تلقي جرعات اللقاح الثلاث الأولى تصل نجاعة اللقاح إلى ٩٩%. يتمتع الجسم بحماية فاعلة بعد تلقي جميع جرعات اللقاح.

Appendix (D)

التفاعل مع أدويـــــة أخرى

١ .عند الإصابة بأمراضى الحمّى، يُنْصح بتأجيل التطعيم.

٢ .إذا أصيب الشخص بفرط حاد للُّقاح في الماضي، أو فرط تحسس لأحد مركبات اللقاح، لا يُنْصح بإعطاء اللقاح.

٣ .كبت المناعة، الخضوع لعلاج كيميائي(Chemotherapy) ، العلاج بالكورتيكوسيترويدات (Corticosteroids)، الخضوع لعلاج بالإشعاع (Radiotherapy) أو أية علاجات أخرى كابتة للجهاز المناعي – قد تقلل كل هذه العوامل من نجاعة اللقاح.

٤ .يُنْصح بإرجاء التطعيم ضد الكُزاز عند انتشار وباء شلل الأطفال.(Polio)

٥ .ينبغي توخي الحذر عند تطعيم الأشخاص الذين يعانون من أمراض تتعلق بتخثّر الدم مثل قلة الصفيحات (Thrombocytopenia) ومرضى النَّاعور (Haemophilia) وخاصةً عند حقن اللقاح إلى داخل العضل، خوفاً من حدوث النزيف. في مثل هذه الحالات يُنْصح بحقن اللقاح تحت الجلد (Subcutaneous)بدل الحقن العضلي.

الآثـــــار الجانبية

الآثار الجانبية الأكثر شيوعا تتضمن

حرارة ، احمرار ، بكاء الطفل و انتفاخ وتورم مكان الحقنة ، حيث يعاني شخص من كل خمس أشخاص من احمرار أو تورم ، حدوث تعب وإعياء في الجسم بعد تناول المطعوم الثلاثي ، يسبب المطعوم الذي يحوي على ذيافين الكزاز ألما وانتفاخا في الذراع كاملا عند شخص بين ٥٠٠ شخص ، ويمكن أن يسبب التهابا في عصب الذراع عند شخص بين ١٠٠ ألف إلى ٢٠٠ ألف شخص.

Appendix (D)

Appendix (D)

Appendices (E)

References of Education program

References of Education Program

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Appendices (F)

Questionnaire

Questionnaire

Effectiveness of an Education Program for Enhancing Primary health care providers Knowledge Regarding Tetanus disease and Tetanus toxoid Vaccine at Primary Health Care Centers in AL-Hilla City.

Participant Number ()

<u>Part I</u> / demographic –social Characteristics of Health care provider:

1- Name of the primary health care center:

2- Age: year

3- Gender: Male female

4- Marital Status: Single married

Divorced widower

5- Occupational status:

Doctor Nurse Doctor assistant Pharmacist Assistant

Laboratory assistant Technical other

6- Educational attainment:

Nursing secondary Graduate

Diploma

Questionnaire

Bachelor

Higher Diploma

Master

Doctorate

7- Year of Experience in primary health care cente year

8- Do you have knowledge about tetanus? Yes **No**

<u>Part II</u> /: Evaluating Health care provider' knowledge about tetanus disease and Tetanus vaccine:

<u>Domain 1:General information of Health care provider' knowledge about tetanus disease and tetanus toxoid vaccine</u>:

1- Tetanus is considered as:

A/ Communicable disease B/ non-communicable disease

C/Seasonal disease D/ None of above

2- Tetanus is:

A/It is an acute disease caused by infection of wounds by germs that carry inside the spores

B/It is an acute disease caused by wound contamination with Clostridium tetani

C/ it leads to Convulsion

Questionnaire

D/ All of the above

3- The disease is transmitted by:

A/When using non-sterile tools to cut the umbilical cord

B/when contaminated materials are used to cover the umbilical

C/By exposing wounds exposed to air

D /All of the above

4- The cause of tetanus is:

A/Parasitic B/ bacteria / virus D/protozoa

5- The incubation period for tetanus is:

A/From 1 to 7 days

B/From one to two weeks

C/From 4 days to three weeks

D/From 5 to 10 days

6- It is considered one of the types of tetanus, <u>except:</u>

A/Pulmonary tetanus B/maternal tetanus

C/neonatal tetanus D/selection B, C

7- The tetanus vaccine is known as:

A/ It is an inert vaccine

B/ It is a weakened live vaccine

Questionnaire

C/ It is a debilitating vaccine ..

D/ It is subscribe ..

8- The appropriate temperature for keeping tetanus vaccine is-- Celsius:

A/2-4 .. B/2-8 .. C/ 2-10 .. D/2- 12 ..

Domain 2:Sign and symptom of Tetanus:

1-The most important symptoms of tetanus are:

A- Breathing difficulties ..

B- Difficulty chewing, difficulty swallowing, and general stiffness in the body

C-Limb numbness .. ..

D-high body temperature ..

2- It is considered one of sign and symptoms of tetanus :

A- continuous cough ..

B- eyelid precipitation ..

C - Forced mandatory smile ..

D- None of above ..

3- The cause of seizures for a patient with tetanus is Exposure to:

A/ loud sound ..

B/ sun exposure ..

C/ high body temperature ..

D/ sudden fall ..

Questionnaire

4- The patient initially suffers:

A / headache .. B / abdominal pain ..

C / pain in the face .. D / back pain ..

5- Tetanus is an acute disease that called lock jaw because:

A / facial muscle spasm ..

B / jaw muscle spasm ..

C / buttock muscle spasm ..

D / transforming the entire muscles of the body ..

Domain 3 How to deal with vaccine administration:

1- Tetanus Vaccine is listed in routine vaccinations in many countries.

A/ yes .. B/ No ..

2- Tetanus vaccine is given to a pregnant mother at ----------:

A/ 20 and 24 Week ..

B/ 27 and 36 Week ..

C/ 32 and 36 Week ..

D/ other time ..

3- The first dose of tetanus vaccine is given at the age of ---------: of the child

A/ One month .. B/ two months .. C/ four months ..

D/ six month ..

4- The difference between a triple and a double tetanus vaccine is:

A/ There is no difference between them ..

B/ Triple vaccine is given to children under one year and the double vaccine given after one year ..

C / Triple vaccines given to pregnant women ..

D / Triple vaccines given to single women in adolescence ..

5- The most groups need of tetanus vaccine is:

A/child .. B/ pregnant woman .. C/ select A and B ..

D/ other ..

6- The appropriate place to inject the vaccine for child is:

A/ Humerus muscle .. B/ subcutaneous .. C/thigh muscle .. D/ in the vein ..

7- Children are vaccinated with two additional boosting doses at school within:

A/ the ages of 7 and 13 .. B/ 6 and 10 years ..

C/ 10 and 15 years ..

D/ these child not need to this vaccine at this age ..

8- Expected side effects after administering tetanus vaccine:

A/ Fever, redness ..

B/ swelling at the site of the injection ..

C/ Fever, lethargy and crying of the child ..

D/ All above ..

Questionnaire

9- Which of the categories is more doses given:

A/child .. B/ pregnant woman .. C/Adolecance ..

D/ Elderly ..

Domain 4 ways of prevention:

1- One of the most important tips to avoid tetanus is:

A/ You can easily avoid tetanus if you receive the vaccine ..

B/ Not to share personal tools with others ..

C/ Not used old tools ..

D// All above ..

2- What the person acquires after tetanus infection:

A / natural immunity .. B / acquired immunity ..

C / negative immunity ..

D/ Does not acquire immunity ..

3- When a wound or acute object occurs, the injured person is given -----:

A / dose of TIG tetanus immune ..

B / tetanus vaccine ..

C/ Corticosteroids ..

D / No vaccine is given ..

4- Among other things necessary to prevent tetanus infection:

A / Well wound care and vaccination ..

B / Ensure that the affected area is not exposed to air ..

..

Questionnaire

C/ Attention hygiene

D / All of the above ..

Domain 5 Complications of tetanus:

1- - ------- It is considered one of the important complications of tetanus:

A/Blood clot .. B/ pneumonia .. C/ Venous blockage ..

D/ All above ..

2- One of the complications of tetanus is considered the most common death cause:

A / respiratory failure .. B / fractures ..

C/ kidney failure .. D/Arterial blockage ..

3- The Convulsion Cause----------:

A / fractures of spine and other bones ..

B / wounds in the mouth and the area around the mouth. ..

C / Bleeding ..

D/ Nothing above ..

4- Treatment of tetanus focuses on controlling -------- the disease until its toxic effects disappear:

A / causes .. B/ symptoms ..

C / the cause of the disease .. D/ complications ..

Questionnaire

Domain 6 The extent of the problem:

1- The disease continues to afflict a health problem in the world

A / Low Income ‘’ B / Medium Income ‘’

C / High Income ‘’ D/ Others ‘’

2- Tetanus spreads when it is:

A / The immunization coverage (vaccination) ratio is low ‘’

B / Lack of hygiene practices ‘’

C/ Use unsteril tools ‘’

D / All of the above ‘’

3- The World Health Organization estimates that neonatal tetanus has -----:

A / decreased ‘’

B / increasingly prevalent ‘’

C / the same ratio ‘’

D/ Nothing above ‘’

4- Dies as a result of this disease ---------- Those who develop it:

A / 25-65% ‘’ B / 35-70% ‘’

C / 45-75% ‘’ D/ 55-80% ‘’

5- Government institutions are sufficient to control tetanus in the presence of---------:

A / Sufficient with the coverage of the vaccine ‘’

B / It suffices to have the vaccine treatment ‘’

C/ Answer A, B ‘’

D/ Nothing above ‘’

6- Social media has a role in raising awareness and controlling tetanus:

A / Always ‘’ B / Sometimes ‘’

C / Never ‘’ D/ Rarely ‘’

استمارة استبيانيه

فاعلية البرنامج التثقيفي لتعزيز معارف مقدمي الرعاية الصحية فيما يتعلق بمرض ولقاح الكزاز في مراكز الرعاية الصحية الأولية في مدينة الحلة

رقم المشارك( )

١- الجزء الاول/ المعلومات الديموغرافية:

١- اسم المركز الصحي:

٢- العمر: سنة

٣- الجنس: ذكر انثى

٤- الحالة الزوجية: اعزب متزوج مطلق ارمل

٥- الحالة المهنية:

طبيب ممرض معاون طبي م صيدلي م مختبر تقني اخرى

٦- التحصيل الدراسي:

- خريج اعدادية تمريض
- خريج دبلوم
- خريج بكالوريوس
- خريج دبلوم عالي
- ماجستير

- دكتوراه

٧- عدد سنوات الخدمة في مجال الرعاية الصحية الاولية سنة

٨- هل لديك معرفة او اطلاع حول مرض الكزاز؟ نعم لا

٢- الجزء الثاني/: تقييم معارف مقدمي الرعاية الصحية الاولية عن مرض ولقاح الكزاز:

اولا: المعلومات العامة لمقدمي الرعاية الصحية فيما يتعلق بمرض ولقاح الكزاز:

ضع علامة صح امام الاختيار المناسب:

١- يعرف مرض الكزاز بانه:

أ / مرض معدي ب/ مرض غير معدي ج/ مرض موسمي

د/ لاشي مما سبق

٢- مرض الكزاز هو:

أ/ مرض حاد ينتج عن تلوث الجروح بالجراثيم التي تحمل بداخل الأبواغ(Spores)

ب/ مرض حاد ينتج عن تلوث الجروح ببكتريا Clostridium tetani

ج/ يؤدي إلى تقلصات مؤلمة في العضلات وتقلص في عضلات الحنك

د/ كل ما سبق

٣- ينتقل المرض عن طريق:

أ/ عند استخدام أدوات غير معقمة في قطع الحبل السري

ب/ عندما تُستعمل مواد ملوثة في تغطية السرة

ج/ عن طريق الجروح المكشوفة المعرضة للهواء

د/ كل ما ذكر

٤- مسبب مرض الكزاز هو :

أ/ فايروس ب/ بكتيريا ج/ طفيلي د/ كائنات اولية

٥- فترة حضانة مرض الكزاز هي:

أ/ من ١ الى ٧ يوم

ب/ من اسبوع الى اسبوعين

ج/ من ٤ يوم الى ثلاث اسابيع

د/ من ٥ يوم الى ١٠ يوم

٦- يعتبر--------- هو من انواع مرض الكزاز ماعدا:

أ/ الكزاز الرئوي ب/ الكزاز الامومي ج/ الكزاز الوليدي

د/ اختيار ب و ج

٧- يعرف لقاح الكزاز بأنه:

أ/ لقاح خامل

ب/ لقاح حي مضعف

ج/ لقاح موهن

د/ لقاح فرعي مترافق

٨- الدرجة الحرارة المناسبة لحفظ لقاح الكزاز هي ------ مئوية :

أ/ ٢- ٤ ب/ ٢- ٨ ج/ ٢- ١٠ د/ ٢- ١٢

ثانيا: اعراض المرض:

ضع علامة صح امام الاختيار المناسب:

١- اهم اعراض مرض الكزاز هي:

أ/ صعوبة في التنفس

ب/ صعوبة في المضغ وصعوبة في البلع وتصلب عام في الجسم

ج/ تنمل الاطراف

د/ ارتفاع درجة الحرارة

٢- يعتبر------- احد علامات واعراض مرض الكزاز:

أ/ سعال مستمر

ب/ هطول جفن العين

ج/ الابتسامة السردونية الاجبارية

د/ لا شيء مما سبق

٣- سبب حدوث التشنجات لمريض مصاب بالكزاز هو التعرض:

أ/ لصوت عال

ب/ لأشعة الشمس

ج/ ارتفاع درجة حرارة الجسم

د/ سقوط مفاجئ

٤- يعاني المريض في البداية:

أ/ ألم في الرأس ب/ الم في البطن ج/ الم في الوجه د/ الم في الضهر

٥- الكزاز هو مرض حاد يسمى بالفك المغلق (lock jaw) بسبب:

أ/ تشنج عضلات الوجه

ب/ تشنج عضلات الفك

ج/ تشنج عضلات الارداف

د/ نحول في كامل عضلات الجسم

ثالثا: طريقة التعامل مع اعطاء اللقاح:

ضع علامة صح امام الاختيار المناسب:

١- يَنْدرج لقاح الكُزاز (تيتانوس (Tetanus Vaccine) (في قائمة التطعيمات الروتينية في كثيرٍ من الدُّول

أ/ انعم ب/ لا

٢- يعطى اللقاح للام الحامل عند ----------:

أ/ الاسبوع ٢٠ و٢٤

ب/ الاسبوع ٢٧ و٣٦

ج/ الاسبوع ٣٢و٣٦

د/ اوقات اخرى

٣- الجرعة الأولى من لقاح الكزاز تعطى على عمر --------- تقريبا من عمر الطفل

أ/ شهر ب/ شهرين ج/ اربعة اشهر د/ ستة اشهر

٤- الفرق بين لقاح الكزاز الثلاثي والثنائي هو :

أ/ لا يوجد فرق بينهما

ب/ اللقاح الثلاثي يعطى للأطفال دون عمر السنة والثنائي بعد عمر السنة

ج/ اللقاح الثلاثي يعطى للنساء الحوامل فقط

د/ اللقاح الثلاثي يعطى للنساء غير المتزوجات في عمر المراهقة

٥- اكثر الفئات احتياجا للقاح الكزاز هي :

أ/ الاطفال ب/ المرأة الحامل ج/ اختيار أ و ب د/ اخرين

٦- المكان المناسب لحقن اللقاح للطفل هو:

أ/ عضلة العضد ب/ عضلة الفخذ ج/ تحت الجلد د/ بالوريد

٧- يتم تطعيم الأطفال بجرعتي تعزيز إضافيتين في إطار المدرسة في سن:

أ/ ٧ و ١٣ سنة ب/ ٦ و ١٠ سنة ج/ ١٠ و ١٥

د/ الاطفال في هذا العمر لا يحتاجون لهذا اللقاح

٨- الاثار الجانبية المتوقعة بعد اعطاء لقاح الكزاز:

أ/ حرارة ، احمرار

ب/ انتفاخ وتورم مكان الحقنة واعياء

ج/ حمى وخمول وبكاء بالنسبة للطفل

د/ كل ما سبق

٩- أي من هذه الفئات تكون عدد الجرعات المعطاة لها اكثر:

أ/ الاطفال ب/ المرأة الحامل ج/المراهقين د/ كبار السن

رابعا: طرق الوقاية من مرض الكزاز:

ضع علامة صح امام الاختيار المناسب:

١- من النصائح المتبعة للوقاية من مرض الكزاز:

أ/ يمكنك أن تتجنب الإصابة بالكزاز بسهولة إذا اخذت اللقاح

ب/ عدم مشاركة الادوات الشخصية مع الغير

ج/ عدم استعمال اشياء قديمة

د/ كل ما ذكر

٢- ماذا يكتسب الانسان بعد الاصابة بالكزاز:

أ/ مناعة طبيعية ب/ مناعة مكتسبة ج/ مناعة سلبية د/ لا يكتسب مناعة

٣- عند حدوث جرح أو إصابة بجسم حاد يعطى المصاب-----:

أ/ جرعة من الكزاز المناعي TIG

ب/ لقاح الكزاز

ج/ مضاد تحسس(Corticosteroids)

د/ لايعطى اي لقاح

٤- من الامور الاخرى اللازمة للوقاية من الاصابة بمرض الكزاز:

أ/ العناية بالجروح جيدا والتطعيم

ب/ الحرص على عدم تعرض المنطقة المصابة للهواء

ج/ الاهتمام بالنظافة

د/ كل ما ذكر

خامسا: مضاعفات مرض الكزاز :

ضع علامة صح امام الاختيار المناسب:

١- يعتبر ------- احد مضاعفات الكزاز المهمة:

أ/ التهاب رئوي ب/ جلطة دموية ج/ انسداد وريدي د/ كل ما سبق

٢- احد مضاعفات الكزاز يعتبر الاكثر شيوعا والذي يؤدي للوفاة :

أ/ فشل الجهاز التنفسي ب/ الكسور في عظام الجسم ج/ فشل كلوي

د/ انسداد شرياني

٣- تسبب التشنجات----------:

أ/ كسر العمود الفقري وعظام أخرى.

ب/ الجروح في الفم والمنطقة التي حول الفم.

ج/ نزف داخلي

د/ لاشي مماذكر

٤- علاج مرض الكزاز يركز على السيطرة على -------- المرض إلى أن تزول آثاره السمية:

أ/ اسباب ب/اعراض

ج/ مسبب المرض د/مضاعفاته

سادسا : حجم انتشار المشكلة:

Questionnaire

١- مازال المرض يشكل مشكلة صحية عمومية مهمة في أنحاء كثيرة من العالم خصوصا في المناطق:

أ/ منخفضة الدخل ب/ متوسطة الدخل ج/ عالية الدخل د/ اخرى

٢- ينتشر مرض الكزاز عندما تكون:

أ/ نسبة التغطية بالتمنيع (التلقيح)منخفضة

ب/ ممارسات الولادة التي تفتقر إلى النظافة

ج/ استخدام ادوات غير معقمة

د/ كل ما ذكر

٣- تقدر منظمة الصحة العالمية أن الكزاز الوليدي قد -----:

أ/انخفض مؤخرا

ب/ازداد انتشارا

ج/ نفس النسبة

د/ لاشي مما ذكر

٤- يموت من جراء هذا المرض ---------- ممن يصابون به:

أ/ ٢٥-٦٥% ب/ ٣٥-٧٠% ج/٤٥-٧٥% د/ ٥٥-٨٠ %

٥- المؤسسات الحكومية كافية للسيطرة على الكزاز بوجود---------:

أ/تكفي بوجود التغطية باللقاح

ب/تكفي بوجود العلاج الخاص باللقاح

ج/ أ وب

د/ لاشي مما ذكر

٦- وسائل التواصل الاجتماعي لها دور في التوعية والسيطرة على الكزاز:

أ/ دائما ب/ احيانا ج/ ابدا د/ نادرا

Appendices (G)

List of Experts

List of Exbert

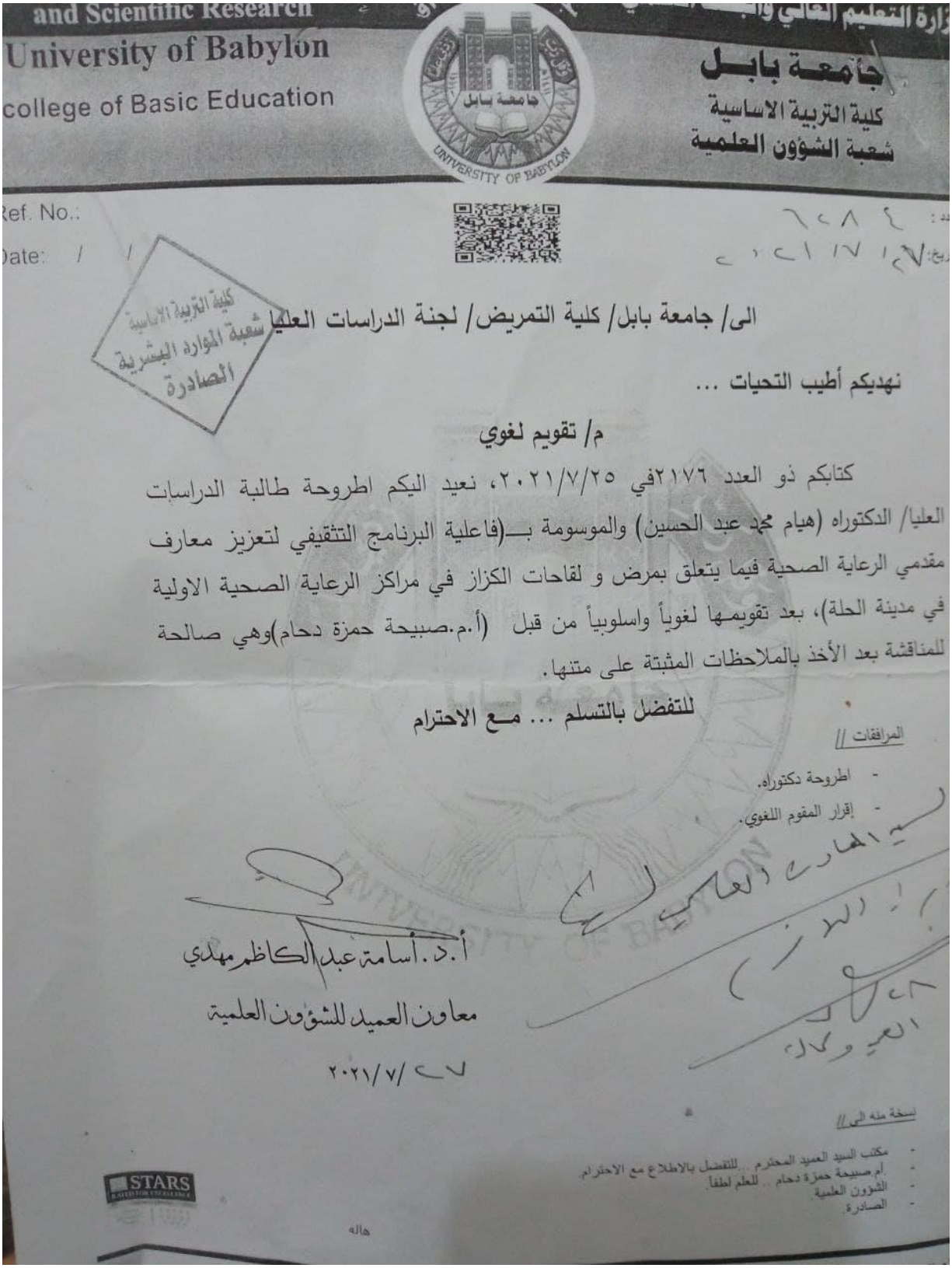
خبراء تحكيم الاستبانة

ت	اسم الخبير	اللقب العلمي	مكان العمل	سنوات الخدمة
١	د. منى عبد الوهاب خليل	أستاذ	كلية التمريض / جامعة البيان	٤٣
٢	د. سجاء هاشم محمد	أستاذ متمرس	كلية التمريض/جامعة بابل	٤١
٣	د. حسن علوان بيعي	أستاذ	كلية طب حمورابي/ جامعة بابل	٣٩
٤	د. قحطان هادي حسين	أستاذ	كلية التمريض/جامعة بابل	٣١
٥	د. سلمى كاظم جهاد	استاذ	كلية التمريض/جامعة بابل	٣٦
٦	د.أركان بهلول ناجي	أستاذ	كلية التمريض/جامعة بغداد	٣٤
٧	د. وسام جبار قاسم	استاذ	كلية التمريض/جامعة بغداد	٢٥
٨	د.فاطمة وناس راضي	استاذ	جامعة الكوفة/ كلية التمريض	٢٥
٩	د.حسين جاسم محمد	استاذ	كلية التمريض/جامعة بابل	٢٨
١٠	د. نهاد قاسم محمد	استاذ مساعد	كلية التمريض/جامعة بابل	٢٨
١٠	د. ناجي ياسر سعدون	أستاذ مساعد	كلية التمريض/جامعة بابل	٢٠
١١	د. مرتضى غانم عداي	استاذ مساعد	كلية التمريض /جامعة الكوفة	١٤
١٢	د.هديل فاضل فرهود	استاذ مساعد	كلية الطب / جامعة بابل	٢٠
١٤	د. امير كاظم حسين	استاذ مساعد	كلية الطب / جامعة بابل	٨

Appendices (H)

Approve of the Linguistic Expert

Approve of the Linguistic Expert



and Scientific Research
University of Babylon
college of Basic Education

جامعة بابل
كلية التربية الاساسية
شعبة الشؤون العلمية

Ref. No.:
Date: / /

كلية التربية الاساسية
شعبة الموارد البشرية
الصادرة

الى/ جامعة بابل/ كلية التمريض/ لجنة الدراسات العليا

نهديكم أطيب التحيات ...

م/ تقويم لغوي

كتابكم ذو العدد ٢١٧٦في ٢٠٢١/٧/٢٥، نعيد اليكم اطروحة طالبة الدراسات العليا/ الدكتوراه (هيام محمد عبد الحسين) والموسومة بـــ(فاعلية البرنامج التثقيفي لتعزيز معارف مقدمي الرعاية الصحية فيما يتعلق بمرض و لقاحات الكزاز في مراكز الرعاية الصحية الاولية في مدينة الحلة)، بعد تقويمها لغوياً واسلوبياً من قبل (أ.م.صبيحة حمزة دحام)وهي صالحة للمناقشة بعد الأخذ بالملاحظات المثبتة على متنها.

للتفضل بالتسلم ... مع الاحترام

المرافقات //
- اطروحة دكتوراه.
- إقرار المقوم اللغوي.

أ.د. أسامة عبد الكاظم مهدي
معاون العميد للشؤون العلمية
٢٠٢١/٧/

نسخة منه الى //
- مكتب السيد العميد المحترم ..للتفضل بالاطلاع مع الاحترام
- ام صبيحة حمزة دحام ..للعلم لطفاً.
- الشؤون العلمية
- الصادرة

STARS

هاله

الخلاصــة

التيتانوس عدوى بكتيرية تتميز بالتشنجات العضلية ، والمعروفة أيضًا باسم الكزاز ، تدخل البكتيريا إلى الجسم من خلال الجروح المفتوحة ، تتسبب البكتيريا في زيادة حجم العضلات مما يؤدي إلى حدوث تقلصات.

تهدف الدراسة إلى تقييم تأثير البرنامج التثقيفي في تعزيز معارف مقدمي الرعاية الصحية الأولية فيما يتعلق بمرض التيتانوس ولقاحات الكزاز.

تم إجراء بحث كمي يستخدم دراسة شبه تجريبية في إعداد برنامج تثقيفي لمقدمي الرعاية الصحية حول مرض ولقاح الكزاز في مراكز الرعاية الصحية الأولية في مدينة الحلة. أجريت الدراسة في الفترة من ١٢ فبراير ٢٠٢٠ إلى ٢٨ مايو ٢٠٢١

تم اختيار عينة غير احتمالية (عينة هادفة) عدد (٤٠) لمقدمي الرعاية الصحية من مركز الرعاية الصحية الأولية. تم تقسيم عينة الدراسة إلى مجموعتين متساويتين من (٢٠) من مقدمي الرعاية الصحية لكل من مجموعة الدراسة الذين تعرضوا للبرنامج التعليمي و (٢٠) مقدم رعاية صحية كمجموعة ضابطة.

يحتوي برنامج مرض الكزاز ولقاحات ذوفان الكزاز في مراكز الرعاية الصحية الأولية على أربع محاضرات. يتكون كل واحد من مخطط يتضمن مقدمة ، ومحتوى ، وأهداف ، ومكان المحاضرة ، وطريقة التدريس ، والطرق المستخدمة في التدريس و الوقت المطلوب.

تم إنشاء استبيان لتقييم معارف مقدمي الرعاية الصحية بخصوص مرض الكزاز ولقاحات ذوفان الكزاز في مراكز الرعاية الصحية الأولية. يتم تحديد صلاحية البرنامج التعليمي والاستمارة التعليمية من خلال لجنة مكونة من (١٤) خبيرًا. حيث تم الحصول على موثوقية الاختبار وإعادة الاختبار من خلال معادلات الاستبيان.

تم تحليل البيانات من خلال تطبيق نهج تحليل البيانات الإحصائية الوصفي الذي يشمل التكرارات والنسب المئوية والمتوسط الحسابي ؛ ونهج تحليل البيانات الإحصائية الاستنتاجية التي تشمل اختبار Chi-squared وتحليل الانحدار المعياري.

أظهرت نتائج هذه الدراسة أن عدد الإناث أعلى من الذكور وعمر مقدم الرعاية الصحية الذين شاركوا في الدراسة ما بين (١٨-٢٧ و ٣٨-٤٧ سنة) ، بالإضافة إلى أن النتائج اظهرت متوسط الدرجة الكلية للدراسة. المجموعة في الاختبار البعدي (١,٨) بينما كانت في الاختبار القبلي ١,٢١) وفي المجموعة

الضابطة كان متوسط مجموع الدرجات في الاختبار البعدي (١,٢) بينما في الاختبار القبلي كان (١,٢) وهذا يشير إلى الفرق بين الاختبار القبلي والبعدي في مجموعة الدراسة حيث حضر مقدمو الرعاية الصحية جلستين من البرنامج التعليمي ، علاوة على ذلك ، فقد تغير تقييم معدل الاستجابة بشكل كبير من الفشل الى النجاح في بنود الأغلبية عند مقارنته بالنتيجة في المجموعة الضابطة حيث تم بقيت مع تغيير طفيف للغاية في الاختبار القبلي والبعدي.

واستنتجت الدراسة إلى أن برنامج لقاح الكزاز ولقاح ذوفان الكزاز في مراكز الرعاية الصحية الأولية كان له تأثير على معرفة مقدمي الرعاية الصحية في مجموعة الدراسة بعد تطبيقه.

توصي الدراسة بتشجيع مقدمي الرعاية الصحية على الالتحاق بجلسات تدريبية لتحسين معرفتهم لإبقائهم على اطلاع دائم باللقاحات ، وخاصة مرض الكزاز وتوكسويد الكزاز.

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة بابل
كلية التمريض

فاعلية البرنامج التثقيفي لتعزيز معارف مقدمي الرعاية الصحية فيما يتعلق بمرض ولقاحات الكزاز في مراكز الرعاية الصحية الأولية في مدينة الحلة

اطروحة مقدمة الـى
مجلس كليـة التمريض، جامعة بابل كجزء من متطلبات نيل شهادة الدكتوراه
فلسفة في علوم التمريـض
تقـدمت بها

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